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ABSTRACT

Compiled is a selected bibliography of social sciences in forestry, including economic, historic, sociological, and business aspects. Five major inclusive categories are the following: social science applied to forestry at large, applied to forestry's productive agents, applied to forest production, applied to manufacturing, and applied to marketing, trade, and demand for forest output. Arranged alphabetically by author, each entry contains the source of information, place and date of publication, volume number, and number of pages. A brief description of each resource is given. Compilation sources include many periodical professional journals, "Forestry Abstract," "Dissertation Abstracts," the "USDA Bibliography of Agriculture," "FAO Documentation," and publication lists from the United States Forest Service experiment stations. (BB)

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SOCIAL SCIENCES in FORESTRY

A CURRENT SELECTED BIBLIOGRAPHY

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SPECIAL APPENDIX:

THESES AND DISSERTATIONS IN PROGRESS

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SOCIAL SCIENCES IN FORESTRY

Subject-Matter Classification Scheme

Note: This outline is regarded as working for the most part from the general to the specific. Material covering two or more sections of this outline is classified in the most general of these sections. Material which is classifiable in any of two or more sections is classified in the most specific of these sections.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A General principles, scope, content, method

B History, status, prospects of forestry in an area, society in an area (This section includes material on forest resources alone, as opposed to that on consumer or intermediate resources alone, for which see appropriate later sections.)
1 General
2 United States, Canada
3 Other north-temperate nations
4 South-temperate nations
5 Nations in lower latitudes

C Law, politics, policy, plan, program, and their administration

D Other influences
1 Taxation
a General
b Property, general and special; severance; lieu payment
c Income, inheritance, other
2 Valuation [See also IIIA5a(5).]
3 Insurance
4 Social interest, value system, custom, folklore, culture
5 Characteristics of the individual
6 Public relations, other

E Research (For research on specific topics, see those topics.)

F Professional and subprofessional affairs, education, employment of foresters

G Social and economic development (See also IB.)

H Environmental concern

Subject-Matter Classification Scheme--Continued

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS
(See also the individual operation or type of output in III, IV, V.)

A Labor (Some material on labor will be found in IF, IV.)
1 General, employment, demand
2 Supply, union
3 Wage, cost, hours, productivity, technology, training, return, benefit
4 Working condition, turnover, absenteeism, safety, insurance
5 Characteristics of the worker

B Owner, ownership, manager, entrepreneur, holding (See also IC, IIC3.)
1 General
2 Public
a General
b Federal, central
c Regional, local
3 Private
a General
b Industrial
c Nonindustrial

C Land
1 Context of supply, requirement, etc.
2 Description, use trend and status, interpreted description
3 Management, use prospect and plan, planning, marketing, tenure
4 Research method

D Capital
1 General, investment, interest, finance
(For investment in forest production, see IIIE; for that in manufacturing, see IVA4.)
2 Credit

III APPLIED TO FOREST PRODUCTION (See also IIB, C.)

A Production including nontimber commodities and services
1 General, supply, multipurpose management
2 Christmas trees, greens
3 Range and livestock
4 Naval stores, maple product
5 Recreation
a General
(1) General
(2) Research
(3) Decision making, planning, management
(4) Demand, consumer, market
(5) Valuation

Subject Matter Classification Scheme--Continued

III APPLIED TO FOREST PRODUCTION--Continued

A Production including nontimber commodities and services--Continued
5 Recreation--Continued
b Driving, on or off road
c Walking, hiking, horseback riding, nature study
d Picnicking
e Camping
f Wilderness activities
g Amenity values
h Other recreation activity
6 Water, soil, watershed management, shelterbelts
7 Wildlife, hunting, fishing
8 Urban forestry

B Production chiefly of timber
1 General, supply
2 Soil, site, site improvement
3 Tree regeneration and improvement
4 Intermediate cutting, pruning, stand improvement
5 Harvest cutting, rotation, cutting cycle, stocking, regulation, allowable cut
(For harvesting treated as engineering, see IVB.)

C Roads, other forest-management transportation
(For transportation in harvesting, see IVB4; in manufacturing and marketing, see VD.)

D Damage and protection
1 From fire
2 Prescribed burning
3 From insects
4 From other agencies
(For water damage and soil erosion, see IIIA6.)

E Decision making, planning, investment, accounting, inventorying
(For investment in general, see IID1.)

IV APPLIED TO MANUFACTURING
(For material on forestry in general, including forest land resources, see IB.)

A The industry in general
1 Status and trend
a General
b United States, Canada
c Other north-temperate nations
d South-temperate nations
e Nations in lower latitudes

Subject-Matter Classification Scheme--Continued

IV APPLIED TO MANUFACTURING--Continued
- A The industry in general--Continued
  - 2 Directory
    (Includes those covering specific branches of industry.)
  - 3 History
  - 4 Decision making, planning, investment, accounting, inventorying
    (For a specific branch of industry, see that branch, "Operation of firm"; for investment in general, see IID1.)

- B Timber-harvesting industry
  (Includes roundwood in general; for specific types, see IVC, "raw material." For harvesting as silviculture, see IIIB4, 5.)
  - 1 Status and trend
  - 2 Operation of firm
  - 3 Utilization of the stand or tree
    (For utilization of a specific product, see the branch of industry in question.)
    - a General
    - b Logging residue and its disposal
  - 4 Transportation (Skidding, yarding, loading, hauling to mill. For transportation in forest management, see IIIC; in manufacturing and marketing, see VD.)

- C Wood-using industry
  - 1 Lumber, allied product, pallet
    - a Industry status and trend
    - b Production, consumption, stocks, other statistics
      (For sawtimber, see IB, IVB; for sawlog, see IVC1d.)
    - c Operation of firm
    - d Raw material
  - 2 Pulp, paper, board
    - a Industry status and trend
    - b Operation of firm
    - c Raw material
    - d By-products
  - 3 Veneer, plywood, panel
    - a Industry status and trend
    - b Operation of firm
    - c Raw material
  - 4 Bark, chips, other residue
    (See also IVB3 and the industry branch in question, "Operation of firm.")
  - 5 Pole, piling, post, mine timber
  - 6 Railway tie
  - 7 Furniture
  - 8 Charcoal, fuelwood, other combustibles; energy
  - 9 Particleboard, hardboard, fibreboard
  - 10 Construction
  - 11 Other wood-using industry

Subject-Matter Classification Scheme--Continued

IV APPLIED TO MANUFACTURING--Continued

D Other forest industry
1 Decorative product
2 Naval stores
3 Maple product
4 Other

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT
(For marketing and demand for productive agents, see II.)

A Demand (See also IF.)
1 General; history of consumption; consumption-production relationships
2 Consumption or production prospect, goal, requirement, prediction
(For material on short-term requirement, see the industry in question in IV, "Industry status and trend.")
3 Consumer and his preference
(For material on specific forest resources, see also IIIA, B.)

B Market, marketing, trade, export, import
1 General
a General
b Futures, hedging
2 Stumpage, log
3 Lumber, plywood, allied products
4 Pulp, paper, board
a Product
b Raw material
5 Other wood products
6 Christmas trees, greens
7 Other type of output (See also IIC3.)

C Price, value
1 General
2 Stumpage, log
3 Other type of output
4 Price reporting

D Transportation (Includes transportation in manufacturing.)
(For transportation in forest management, see IIIC; in harvesting, see IVB4.)

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

A WESTOBY, JACK C. Forestry, foresters, and society. New Zealand Journal of Forestry 23(1): 64-84. 1978.

Foresters around the world are now recognizing the importance of the social objectives of forestry. Social objectives are as important as economic objectives.

B1 JOURNAL OF FOREST HISTORY 22(4): 179-239. Oct 1978.

Special issue on the role of forestry and wood in World War I. Includes: All wooden on the Western Front (F. N. Schubert); The biggest regiment in the army (D. A. Clary); A forester in the Great War: reminiscences of Company E, 10th Engineers, in France (G. S. Kephart); Wooden aircraft and the Great War (R. P. Hallion); The National Park Service and the First World War (M. M. Sherfy); Defense mobilization in the southern pine industry, the experience of World War I (J. E. Fickle); The deterioration of forest grazing land, a wider context for the effects of World War I (D. R. Mortensen); The impact of World War I on French timber resources (J. R. Jeanneney).

B1 LESLIE, A. J. Forestry, long-term prospects are good. World Wood 19(10): 17-18. Sep 1978.

Despite the impact of the recession on the forest industry, forestry has made some real gains since the Seventh World Forestry Congress of 1972. Forestry is no longer considered an obstacle to agricultural expansion, but is instead recognized for its catchment and soil protection services. Tropical forests continue to be mistreated. Two factors could contribute to the less wasteful utilization of these forests: (1) use of mixed tropical hardwoods for pulping, and (2) the energy crisis.

B2 BASSETT, PATRICIA M. Timber resources of southwest Oregon. USDA Forest Service Pacific Northwest Forest and Range Experiment Station Res. Bull. PNW-72, 29 pp. 1977.

B2 BURDE, JOHN H., III, and DAVID C. BAUMGARTNER. Availability of forest and associated land resources in Illinois. USDA Forest Service North Central Forest Experiment Station Res. Note NC-236, 4 pp. 1978.

Forest and associated lands include not only the conventionally-defined forest lands, but also all noncommercial farms, unimproved pasture, and brush lands.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 JACOBS, WILLIAM F. The Dixie Crusade. American Forests 84(12): 18-21, 38, 40, 42-46. Dec 1978.

50 years ago the AFA sponsored an educational campaign to reduce forest fires in the South. Special barnstorming trucks, silent movies, and trained men were used in this crusade to teach rural southerners about forestry.

B2 KNIGHT, HERBERT A. Sizes of timber stands in the Piedmont of South Carolina. USDA Forest Service Southeastern Forest Experiment Station Res. Note SE-267, 5 pp. Nov 1978.

About 30 percent of the timberland is broken up into tracts smaller than 10 acres.

B2 LAMBERT, HERB. The South, dynamic fiber factory or undeveloped site? Forest Industries 105(11): 34-35, 87. Oct 1978.

Private nonindustrial owners control 78 percent of the commercial forest land in the South. The South should develop again into the nation's woodbasket.

B2 MC ELWEE, R. L., and N. H. BELL (EDS). Productivity of southern forests. Proceedings of the 8th Forestry and Wildlife Forum, Apr 13-14, 1978, Blacksburg, VA. Virginia Cooperative Extension Service, Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources, MT-101, 144 pp. Sep 1978.

Includes: We still need wood (G. Cheek); Economic feasibility of intensive management (M. Vasievich); Independent logging contractors on center stage (K. Rolston); Will the dealer system survive? (W. Jarck); Managing forests for people (J. Montgomery); Living with regulation, a national legislative outlook (W. McCreadie); Industrial reaction to regulation (Z.D. Wright).

B2 PLACE, I. C. M. Forestry in Canada. Journal of Forestry 76(9): 557-562. Sep 1978.

Forests occupy approximately 844 million acres in Canada. The provinces own most of the forest land; only 8 percent of the productive forest is privately owned. The forest supports, directly or indirectly, approximately 1.3 million jobs. Forest recreation is a $3-billion industry.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 POWELL, DOUGLAS S., and TERESA M. BOWERS. A preview of Maryland's forest resource. USDA Forest Service Northeastern Forest Experiment Station Res. Note NE-252, 7 pp. 1978.

1976 survey shows that Maryland has 2.5 million acres of commercial forest land, 90 percent of which is privately owned.

B2 SMYTH, J. H., A. BROWN, and P. JAKIBCHUK. Forestry statistics, Ontario. Environment Canada, Forestry Service. Great Lakes Forest Research Centre, Sault Ste. Marie. 4 pp. 1978.

B2 SORENSEN, JEAN. A perspective on forest policy: Part I, 1900-1977. ForesTalk, pp. 10-16. Spring 1978.

History of forestry and the forest industry in British Columbia.

B2 STERNITZKE, HERBERT S. Coastal Plain hardwood problem. Journal of Forestry 76(3): 152-153. Mar 1978.

Unwanted hardwoods occupy much of the growing space on the Coastal Plain. Cultural measures to increase pine stocking could be undertaken at moderate cost on four-fifths of the Coastal Plain acreage.

B2 UNGER, DAVID G. Natural resources and the nation's future. Paper presented at the General Session, FPRS 32nd Annual Meeting, Jun 26, 1978, Atlanta. Forest Products Journal 28(10): 9-12. Oct 1978.

How the USDA views the role of research in meeting the nation's resource (including wood) needs, the Carter administration's initiatives regarding natural resources, and Senate and House legislation concerning forestry.

B2 USDA FOREST SERVICE. Forest statistics of the U.S., 1977. Review draft. USDA Forest Service, 133 pp. 1978.

B2 WADE, LARKIN H. Commitment of wood to the nation's needs. Paper presented at the General Session, FPRS 32nd Annual Meeting, Jun 26, 1978, Atlanta. Forest Products Journal 28(10): 14-15. Oct 1978.

Increasing production on private nonindustrial lands is one way of meeting the nation's wood needs.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 WELCH, RICHARD L. Wood from land clearing and noncommercial silvicultural operations in the Southeast. USDA Forest Service Southeastern Forest Experiment Station Res. Note SE-268, 6 pp. Nov 1978.

Annual rates of removal from commercial forest land in the Southeast average almost 945 million cubic feet in land-clearing operations and 94 million cubic feet in noncommercial cultural operations. Only half of these removals are being utilized.

B2 WOERHEIDE, JOHN D. Missouri-Illinois forest picture. Journal of Forestry 76(9): 551-554. Sep 1978.

B3 FINNISH FOREST RESEARCH INSTITUTE. Yearbook of forest statistics, 1976. In Finnish; Eng. sum. Folia Forestalia 345. 200 pp. 1978.

Statistics and analysis of forest resources, labor force, forestry production, wood consumption, output by forest industries, and foreign trade.

B3 FORSTER, ROBERT B. Japanese forestry: the resources, industries and markets. In English; Fre. sum. Environment Canada, Forestry Service Info. Rep. E-X-30, 106 pp. Oct 1978.

Approximately 68 percent of the land in Japan is forested. Despite this, Japan imported 64 percent of its forest product consumption in 1975. Japan is Canada's second biggest customer for forest products.

B3 LILJENAS, I. The centenary of the communal forests of Norrbotten. In Swedish; Eng. sum. Sveriges Skogsvardsforbunds Tidskrift 74(5): 591-614. 1976.

History of collectively-owned forests formed in an area of Sweden between 1876 and 1894. Economic and social importance of these forests.

B3 LOBOVIKOV, T. S. Forest enterprises of the future. In Russian. Lesnoi Zhurnal No. 3, pp. 134-140. 1977.

Development and organization of forestry in the USSR during the next 30 years.

B3 LOCKE, G. M. L. The place of forestry in Scotland. A basis for local authority planning. Research and Development Paper, Forestry Commission, UK, No. 113, iii + 27 pp. 1976.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Report issued to all regional authorities in Scotland in 1975 contains 3 sections: forest policy, forestry in Scotland, forestry strategy for Scotland.

B3 LONNSTEDT, L. A simulation model of forest development in the county of Vasterbotten. In Swedish; Eng. sum. Rep. No. 2/1978. Department of Forest Economics, Agricultural University of Norway. 66 pp. 1978.

Model can reproduce the forest development, 1958-1972. Model shows how different forest policy measures will affect the forest.

B3 ROCHE, L. Forestry and the community. Reprinted from the New Ecologist, No. 4, Jul/Aug 1978. Quarterly Journal of Forestry 72(4): 226-232. Oct 1978.

Environmental and urban forestry are vital to the future health of Great Britain. Educational programs and the involvement of local communities could help in preservation and reforestation.

B3 SAETHER, R. Size of forest holdings and utilization of resources in Norwegian forestry. Tidsskrift for Skogbruk 86(1): 49-53. 1978.

B3 SMITH, F. W. Sociological survey of border forest villages. Research and Development Paper, Forestry Commission, UK, No. 112, 13 pp. 1976.

Residents of 5 forest villages on the English side of the Scottish border are generally satisfied with both living and working conditions. The villages were founded in the 1950s as part of a plan for the afforestation of upland.

B4 BERG, PETER J. A workshop on Canterbury forests. New Zealand Journal of Forestry 23(1): 121-136. 1978.

Seminar held in Christchurch Feb 27-Mar 1, 1978. Topics discussed: current state of forest management in Canterbury, recent research, and the rationale for future forest management in the region.

B4 DARROW, WILLIAM K. South African forestry in an energy-poor world. South African Forestry Journal No. 105, pp. 1-7. Jun 1978.

Projections of timber demands in South Africa should take into account the role of energy, its use in forestry, and its changing pattern of availability. Outlines the changes that may occur in South African forestry and forest industries.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B4 HAYNES, C. D. Land, trees and man. In English; Fre. and Spa. sum. Commonwealth Forestry Review 57(2): 99-106. Jun 1978.

History of a European forestry operation in Australia, emphasizing the conflicts between the European directors and the Aboriginal landowners.

B4 NEW ZEALAND FOREST SERVICE. Statistics of the forests and forest industries of New Zealand to 1977. New Zealand Forest Service Information Series 33, 101 pp. 1978.

B4 PRATT, C. J. The forest wealth of New Zealand. Quarterly Journal of Forestry 72(3): 129-138. Jul 1978.

Forestry in New Zealand: tree species, silviculture and forest management, diseases and pests, fire control, marketing and utilization, conservation, private forestry, and education.

B5 ALI, S. AMJAD. Systematized management and planting programs stressed in fifth Five Year Plan. World Wood 19(10): 54. Sep 1978.

Two major features of Pakistan's plan are expansion of federal forest management programs and afforestation of desert areas.

B5 ARNOLLI BEREND. Analysis of the Colombian forestry situation. In Spanish. INDERENA-PNUD-FAO-CONIF, Project Col/74/005. Bogota, Colombia. 145 pp. Oct 1977.

Harvesting, forest industries, wood marketing, and forestry education.

B5 LEW WING-HING. The influence of utilization on forest management. Malaysian Forester 41(2): 190-196. Apr 1978.

Changing technology and the energy crisis will affect forestry in Malaysia.

B5 MALAYSIAN FORESTER. Forest resources of Peninsular Malaysia; Forest resources of Sabah; Forest resources of Sarawak; Philippine forest resources; Forest resources in Thailand; Indonesian forest resources. Malaysian Forester 41(2): 82-120. Apr 1978.

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B5 PRETO, G. The present state of forestry in Somalia, and future prospects. In Italian; Fre., and Eng. sum. Annali dell'Istituto Sperimentale per la Selvicoltura 7, pp. 119-201. 1976.

B5 SUDIONO, JON, and LUKITO DARYADI. Some impacts of the utilization of rainforests in Indonesia. Malaysian Forester 41(2): 121-124. Apr 1978.

Ecological, social, and economic impacts.

B5 SUSAETA, ELAIDO S. Economic integration and perspective development of forestry and forest industries in Central America. Dissertation, Ph.D. University of Michigan. 269 pp. 1978.

Central American Common Market has fostered the pronounced growth of output in lumber, plywood, and special papers. Outlook is bright for forestry and for the lumber, wood-based panel, and light paper industries. CACM should continue to influence favorably (a) market opportunities for regional output, (b) incentives for local and foreign investment, (c) financial opportunities of investors, (d) entrepreneurial attitudes, and (e) raw material availability for the larger processing units.

B5 VIRTUCIO, FELIZARDO D., and MONINA G. TORRES. Status of management and utilization of forest resources in the Philippines. Malaysian Forester 41(2): 149-166. Apr 1978.

Forest resources have been contributing greatly to the social and economic development of the Philippines. World demand for hardwood products has fostered the growth of forest industries. To attain optimum levels of forest productivity and to realize the full economic potential of the forest, improved management and utilization are needed.

C CULHANE, PAUL J. Politics and the public lands, local policy processes of the U.S. Forest Service and the Bureau of Land Management. Dissertation, Ph.D. Northwestern University. 439 pp. 1977.

How interest groups affect local policy decisions of the Forest Service and the Bureau of Land Management.

C FRASER, T., and G. P. HORGAN. Further comment on the Forestry Development Plan for Otago. New Zealand Journal of Forestry 23(1): 49-63. 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

Questions the validity of the social benefits portion of the New Zealand Forest Service's Forestry Development Plan for Otago.

C HAEUSSLER, FRED. Forestry and the water law. Forest Farmer 38(1): 8-10, 15-16. Oct 1978.

Sections 402, 404, and 208 of the Water Pollution Control Act are applicable to forestry.

C HØSTELAND, J. E. Factors affecting the level of activity in forestry. In Norwegian; Eng. sum. Rep. No. 3/1978. Department of Forest Economics, Agricultural University of Norway. 135 pp. 1978.

Forest owners' behavior in 1 community in Norway. More attention should be paid to qualitative measures in forest policy: different measures should be applied to different groups.

C MC QUILLAN, ALAN G. (ED). Perspectives in resources planning. Montana Forest and Conservation Experiment Station, School of Forestry, University of Montata, Missoula. 132 pp. 1977.

Collection of papers presented in program in Missoula in the fall of 1976. Includes: A global view of natural resource economics and planning (Chandler Morse); Supply and demand for natural resources in the United States (Sterling Brubaker); Planning and freedom of the individual (Richard L. Stroup); The Resources Planning Act and planning on national forests (Jay M. Hughes), with comment on the National Forest Management Act (Keith M. Thompson); The Environmental Impact Statement, how effective a tool? (Panel of Rick Applegate, Jay Gruenfeld, Vern Hamre, and Robert F. Wambach).

C MORENO, GONZALO. Colombian forest policy and legislation: 1829-1974. In Spanish. Thesis degree. University of Rosario, Bogota. 137 pp. 1976.

Forest regulations: their evolution to present day.

C NAGLE, GEORGE S. A national forest policy for Canada? Journal of Forestry 76(11): 718-722. Nov 1978.

Provincial governments are responsible for managing the forest resources. There is a need for a national forest policy or joint federal-provincial accord. Canadian Council of Resource and Environment Ministers has initiated a national forest policy development project.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

C WETTON, FRANCES. Evolution of forest policies in Canada. Journal of Forestry 76(9): 563-566. Sep 1978.

The Canadian constitution divides authority for forest and forest industry development between federal and provincial governments. This has led to serious jurisdictional disputes and fragmented policy decisions. To formulate policies for rational forest development, trust and cooperation are needed.

C WINGER, HAROLD S. No problems, no BMPs needed. Forest Farmer 38(1): 11, 16. Oct 1978.

Best Management Practices guidelines are not required under Section 208 planning of the Water Pollution Control Act unless forestry activities create water quality problems.

D1a GAFFNEY, MASON. An overview of forest taxation, pros and cons of alternative forest taxes. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 4-16. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Property tax on standing timber, property tax on land, yield tax, and income tax.

D1a HANEY, HARRY L., JR., and JOHN E. GUNTER (EDS). Proceedings of the Forest Taxation Symposium. Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 197 pp. 1978.

Papers deal with 4 main topics: Federal timber taxation, past and present; The future of federal timber taxation from differing perspectives; Experience in moving from ad valorem to modified assessment laws; and Experience in moving from ad valorem to yield tax laws. Individual papers are cited in ID1a, ID1b, and ID1c.

D1a RIIHINEN, PAIVIO. Forest taxation, a multi-face problem. In Finnish; Eng. sum. Metsa Ja Puu No. 2, pp. 11-13. 1977.

Forest taxation in Finland is based on an estimated annual yield and not on actual stumpage revenue. With rising incomes the woodland owners tend to refrain from selling their stumpage. This tendency would be strengthened by adopting a forest taxation system based on actual revenue. A 10-percent reduction in sales would be sufficient to offset the increased tax income from forestry.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

D1b BRETT, FRED. Florida's experience. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 107-112. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Florida's Greenbelt Law, an agricultural assessment law, recognizes the association between forestry and agriculture. Tax rates provided by this law keep Florida's timberlands productive.

D1b CONKLIN, JOHN B. The Washington yield tax, a successful beginning. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 145-156. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

D1b HARGREAVES, LEON A., JR. The impact of rejecting valuation based on potential productivity of forest and farm lands in Georgia. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 99-106. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Of all southern states, Georgia levied the highest property tax per acre on forest lands in 1975.

D1b KLEMPERER, W. DAVID. An analysis of forest tax equity guides. Forest Science 24(3): 318-326. 1978.

Examines resource allocation implications of applying various equity criteria in setting forest property tax levels.

D1b KLEMPERER, W. DAVID. Factors affecting forest yield tax impacts. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 119-133. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Factors include: harvest patterns over time, tax shifting, age class distributions, payoff period, reforestation cost, and inflation rate.

D1b MC DONELL, NORMAN R. The ad valorem tax on forest property. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 92-98. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

If timber remains under the property tax, modifications must be made to recognize the uniqueness of timber growing as a business venture.

D1b MC KILLOP, WILLIAM. Prospective economic and land use impacts of California's yield tax system. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 157-162. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

D1b SCOTT, BILLY DEAN. The Washington Forest Tax Law, its development and implementation. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 134-144. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Washington's Forest Tax Law of 1971 set up a dual system for taxing forest properties: an ad valorem tax levied annually on the value of land used for timber production, and an excise tax or yield tax based on the value of timber harvested.

D1b SIEGEL, WILLIAM C. An overview of forest property tax laws in western United States. Paper presented at the Western Regional Forest Property Taxation Workshop, Olympia, Washington, Nov 14-16, 1977. In Proceedings, Western Regional Forest Property Taxation Workshop, pp. 10-17. Nov 1977.

Standing timber has traditionally been assessed under the general property tax, sometimes as a separate entity and sometimes together with the land. A number of western states have recently shifted to the yield tax on timber in lieu of the property tax.

D1b STOCK, JOHN W. The New York experience. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 113-118. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Property tax laws in New York make owning forest land unprofitable.

D1b WEAD, JAMES K. Administration of state and local taxation on timber and forest lands. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 182-193. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

D1b WEBSTER, HENRY H., RALEIGH BARLOWE, and J. G. OLMSTEAD. Forest taxation in Michigan, a long history of moderate success with proposals for change and improvement. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 163-181. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

D1c CONDRELL, WILLIAM K. The landowner through a lawyer's eyes. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 46-64. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

Capital gains tax treatment of timber owners.

D1c SIEGEL, WILLIAM C. Historical development of federal income tax treatment of timber. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 17-25. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

D1c STEEN, HAROLD K. (ED). Capital gains for forest lands, origins of the 1944 tax legislation. Journal of Forest History 22(3): 146-153. Jul 1978.

Origins of the 1944 Bailey Amendment which expanded capital gains tax treatment of forest lands. Includes segments of senatorial debate, excerpts from interviews with an industry spokesman and a Forest Service tax specialist, and entries from the diary of a consulting forester and legislative advocate.

D1c STREYFFERT, T. The tax burden of forest enterprises. In Swedish. Sveriges Skogsvardsforbunds Tidskrift 74(6): 639-655. 1976.

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D1c SUTHERLAND, CHARLES F., JR. The importance of death taxes to forestry. In Proceedings of the Forest Taxation Symposium, Virginia Polytechnic Institute and State University, Blacksburg, VA, Nov 30-Dec 1, 1977. pp. 81-91. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-2-78. 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

E PALO, MATTI. The development of forest research organizations, the effects of science communities and monopolies. Scandinavian Forest Economics No. 18, pp. 20-30. May 1978.

For forestry economics to thrive, an effective and efficient international science community is required. Many handicaps which afflict the small countries in minority language regions are due to problems associated with science monopolies.

E SMITH, J. HARRY G. Forest resources research in Canada. Journal of Forestry 76(9): 566-570. Sep 1978.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. National program of research for forests and associated rangelands. Proceedings of a National Working Conference, Jan 17-19, 1978, Washington, D.C. U.S. Department of Agriculture, Science and Education Administration, Agricultural Reviews and Manuals Series ARM-H-1, 96 pp. Aug 1978.

Representatives of government, industry, and consumer, environmental, and conservation organizations identified the national research needs for forests and associated rangelands.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. National program of research for forests and associated rangelands. 41 pp. Aug 1978.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. Program of research for forests and associated rangelands, North Central Region. 45 pp. Aug 1978.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. Program of research for forests and associated rangelands, Northeastern Region. USDA Forest Service Northeastern Forest Experiment Station Gen. Tech. Rep. NE-42, 48 pp. 1978.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. Program of research for forests and associated rangelands, Southern Region. USDA Forest Service Southern Forest Experiment Station Gen. Tech. Rep. SO-19, 28 pp. Aug 1978.

E U.S. DEPARTMENT OF AGRICULTURE AND NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES. Program of research for forests and associated rangelands, Western Region. 32 pp. Aug 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

E ZACHAR, DUSAN. Importance of the Slovak and Czechoslovak Academy of Sciences for the development of forest sciences and research in Slovakia. In Czech; Eng. sum. Lesnicky Casopis 24(3): 179-185. 1978.

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F DENEKE, FREDERICK J. Urban forestry education. Paper presented at the Midwest Chapter Meeting of the International Society of Arboriculture, Milwaukee, Wisconsin, Feb 3, 1977. Journal of Arboriculture 4(7): 154-156. Jul 1978.

Traditional forestry curricula are not appropriate for urban forestry. Urban forestry programs should be interdisciplinary with courses in forestry, horticulture, and other subjects such as plant pathology and landscape architecture.

F DENEKE, FREDERICK J. Urban forestry education. Journal of Forestry 76(8): 499-500. Aug 1978.

Revised version of paper cited in preceding notation.

F HAHTOLA, KAUKO. Land use economics as a field of research and education in the University of Helsinki. Scandinavian Forest Economics No. 18, pp. 8-12. May 1978.

Specialists who understand the economic, institutional, and environmental aspects of planned use of land, water, and natural resources are needed in business, research, government, and education.

F HARLEY, J. L. Forestry education and research. Unasylva 29(118): 10-11.

Forestry schools should promote staff research and encourage contacts with scientists from other disciplines.

F NORTHERN LOGGER AND TIMBER PROCESSOR. Forestry education serves students and employers. Northern Logger and Timber Processor 27(4): 18-20. Oct 1978.

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F PARDO, RICHARD. Can a woman be a forester? American Forests 84(9): 22-25. Sep 1978.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

F PELZ, DIETER R. Computer-assisted instruction in forestry. Journal of Forestry 76(9): 570-573. Sep 1978.

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F SAMWAYS, MARSHA K., KENNETH N. BROOKS, and FRANK D. IRVING. Incorporating the nonforester into forestry master's programs, a survey. Journal of Forestry 76(9): 574-575. Sep 1978.

35 of 37 U.S. forestry schools surveyed accept persons with no previous forestry education into their master's programs.

F THOMPSON, EMMETT F., ALFRED D. SULLIVAN, and EDWARD F. ROBIE. Income and employment of SAF members, 1977. Journal of Forestry 76(11): 712-714. Nov 1978.

In 1977, median income of SAF members was $20,500. Increases in income have not kept pace with inflation. A positive relationship exists between level of education and income.

F WALKER, LAURENCE C. Licensing of foresters, pros and cons. Journal of Forestry 76(11): 728-731. Nov 1978.

As of mid-1978, 14 states had adopted laws for the registration and licensing of foresters, and 10 states were considering action.

G ATMOSOEDARJO, SOEKIMAN, and S. G. BANYARD. The prosperity approach to forest community development in Java. In English; Fre. and Spa. sum. Commonwealth Forestry Review 57(2): 89-96. Jun 1978.

The State Forestry Corporation is a profit making body which seeks to improve the community's level of living. By promoting labor intensive jobs, incentive programs, and education, the Corporation contributes to this aim.

G DE MONTALEMBERT, M. R. Forestry is part of fabric of rural communities. World Wood 19(10): 21. Sep 1978.

How the forest influences the development of rural communities, and the effect on the forest of changing socio-economic pressures within the communities.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

G LUNNAN, A. Employment, commuting and migration in forest districts 1950-1977. In Norwegian; Eng. sum. Rep. No. 4/1978. Department of Forest Economics, Agricultural University of Norway. 74 pp. 1978.

Reduction of employment in forestry is accompanied by migration and commuting from forestry districts. Social consequences of this development.

G SOLBERG, B., and H. K. SEIP. Report to NORAD: Forestry development project in the Himalaya Region of India. Norwegian Agency for International Development, Oslo. 181 pp. Aug 1978.

Proposal for a Norwegian funded project to develop both nontimber forestry and industrial forestry in Uttar Pradesh and Jammu & Kashmir.

G WORLD BANK. Forestry. Sector policy paper. World Bank, Washington, D.C. 65 pp. Feb 1978.

Forestry and development; Scope and prospects for forest development; and Role of the Bank in forestry.

H KUMAR, PREM. Environmental planning and forestry, the Canadian experience. In English; Hin., Ger., and Fre. sum. Indian Forester 104(5): 313-320. May 1978.

Broad trends and current methods of environmental planning in forest resource management in Canada.

H THOR, EDWARD C., GARY H. ELSNER, MICHAEL R. TRAVIS, and KATHLEEN M. O'LOUGHLIN. Forest environmental impact analysis, a new approach. Journal of Forestry 76(11): 723-725. Nov 1978.

Computerized system simplifies the work of land-management agencies in conducting environmental impact analyses and in preparing impact statements.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A1 CHATTERJEE, N. Employment potential of forest-based industries. In English; Hin., Ger., and Fre. sum. Indian Forester 104(3): 149-158. Mar 1978.

Study of 9 forest-based industries showed that the safety match industry has the greatest employment potential.

A1 HILMI, H. A. Labor-intensive plants and enhanced conditions needed. World Wood 19(10): 23. Sep 1978.

In developing countries, the cost of machines is greater than the cost of labor. Labor-intensive methods in forestry should be encouraged. Forest authorities and professional associations of foresters should strive for improved living and working conditions for the forest worker. Women should have a role in forestry.

A1 LONNSTEDT, L. The forest as district employer. An overview of important factors. In Swedish; Eng. sum. Tidsskrift for Skogbruk 86(1): 29-40. 1978.

How stopped or slowed mechanization in forestry affects the forest and forest employment, in the short and long run.

A2 GRANSKOG, JAMES E., and WILLIAM C. SIEGEL. Legal distinction between employee and independent contractor as applied to collective bargaining activities in timber harvesting. Forest Products Journal 28(9): 16-20. Sep 1978.

Factors which distinguish between employee and contractor under the labor relations laws, and the application of these factors to forest industry cases.

A3 HEISKANEN, H. Basic problems of the wage system for forest work. In Finnish; Eng. sum. Silva Fennica 10(4): 266-276. 1976.

Main disadvantages of present piece-rate system in Finland: low earnings for older workers, health hazards, worker dissatisfaction, and large income differences.

A4 ELY, D. A. Potentially dangerous calender area requires enforced safety practices. Pulp and Paper 52(11): 106-112. Oct 1978.

Preventing accidents in paper mill calender areas.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A4 FITTS, JOHN. Meeting the OSHA/EPA challenge. Part 3: safety. Wood & Wood Products 83(9): 25-28, 30. Sep 1978.

Worker safety in the wood products industry.

A4 HALL, DONALD D. What can be done about poor safety records in the finishing department? Pulp and Paper 52(11): 102-105. Oct 1978.

In fine paper mills, finishing departments often have the highest accident rate. Enforcing safety rules could prevent accidents.

A4 RILEY, ROBERT G. How to protect workers from injury while loading, unloading railcars. Pulp and Paper 52(11): 97-101. Oct 1978.

By following safety regulations established for the pulp and paper industry, injuries, damaged merchandise, and railcar door impairment can be avoided.

A4 RILEY, ROBERT G. Where do serious accidents and fatalities occur in paper mills? Pulp and Paper 52(10): 197-199. Sep 1977.

Review of 51 paper mill fatalities shows that stock preparation, maintenance, and material-handling areas present the highest risk for injuries and fatalities.

A5 CUSTER, CHUCK. In wood products jobs, women "take it like a man." Wood & Wood Products 83(8): 42-44. Aug 1978.

85 percent of wood industry plants employ women today, as compared with 62 percent 10 years ago.

B2b BAHARUDDIN HAJI GHAZALI. A managerial approach to national forest administration. Malaysian Forester 42(2): 184-189. Apr 1978.

Forestry Department in Peninsular Malaysia should adopt a business policy approach for administering the forest resource.

B2b BLACK, ALAN W. A sociological perspective on forest services. Australian Forestry 41(2): 66-77. Jun 1978.

There is conflict within forest services, and between forest services and society. Foresters often concentrate on the purely technical aspects of forest management, while ignoring the social elements.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

B2b FISHERIES AND ENVIRONMENT CANADA. Annual report for the fiscal year ending March 31, 1977. In English and French. Fisheries and Environment Canada. 1978.

B2b OTHMAN BIN ABDUL MANAN. Practical problems in forest management. Malaysian Forester 41(2): 197-200. Apr 1978.

Managing Peninsular Malaysia's forests.

B2b RYLE, G. B. For 'twas a famous victory. Quarterly Journal of Forestry 72(3): 151-164. Jul 1978.

Article written shortly after the end of World War II recounts the activities of the British Forestry Commission in the South Wales Division from 1939 to V.J. Day in August 1945.

B2c COHEE, MELVILLE H., D. RICHARD GARDA, and JOHN W. HUNT. Impacts of Kentucky state parks on local, regional, and state economies. Development Cabinet, Office of the Secretary. Frankfort, Kentucky. 199 pp. 1977.

Impacts from annual expenditures and impacts from initial expenditures.

B2c LOTHNER, DAVID C., EDWIN KALLIO, and DAVID T. DAVIS. Minnesota's tax-forfeited land: some trends in acreages, sales and prices. USDA Forest Service North Central Forest Experiment Station Res. Bull. NC-37, 6 pp. 1978.

Because county-administered tax-forfeited land is important for supplying a variety of forest-based resources, changes within the county-administered land base could greatly affect the total available supply of timber and other forest-based resources in Minnesota.

B2c LOTHNER, DAVID C., EDWIN KALLIO, and DAVID T. DAVIS. Administering Minnesota's tax-forfeited land, some trends in revenues and expenses. USDA Forest Service North Central Forest Experiment Station Res. Bull. NC-38, 6 pp. 1978.

B3a FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Forestry Department. Private forestry and forest owners' activities in Europe. In English, Spanish, and French. 18th Session of the European Forestry Commission, Rome, Sep 13, 1977. Rome. 21 pp. 1977.

B3a LUKE, DAVID L., III. Forest farming in the age of energy concern. Forest Farmer 37(9): 6-7, 32. Jul/Aug 1978.

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Timber growers must deal with public policies that could have detrimental effects on the industry. Tax laws, federal forest land withdrawals, and the Clean Air Act are areas of concern.

B3a VOLPINI, C. Private forestry in Italy. In Italian; Fre., Eng., and Ger. sum. Cellulosa e Carta 28(9): 3-15. 1977.

Area and output of private woodlands in Italy; importance of private forestry to the national economy.

B3b MC WHORTER, VAN. Recreation policies of forest industry landowners in Mississippi. M.S. Thesis. University of Southern Mississippi. Dec 1978.

B3c BRABANDER, H. Economic importance of common woodland on farms in relation to the real estate market. In German. Agrarrecht 7(12): 347-351. 1977.

B3c CHRISTIE, W. J. A second look at increased production on a west highland estate. Scottish Forestry 32(4): 239-246. Oct 1978.

Multiple-use management of a Scottish estate. Since 1965, the amount of woodland, cattle, and sheep have increased dramatically.

B3c GOULD, ERNEST M. Wanted: high-satisfaction forestry. Journal of Forestry 76(11): 715-718. Nov 1978.

59 percent of commerical forest land in the U.S. is controlled by private nonindustrial owners. These owners have needs which are not being met by foresters. Many landowners are not interested in harvesting their trees. Individualized management plans are needed that take into account multiple objectives of landowners.

B3c GRAY, JOHN L. The nonindustrial private forest ownership "problem": a viewpoint. Journal of Forestry 76(8): 466, 503. Aug 1978.

Nonindustrial private forestry sector is not a problem. Goals of individual owners need to be recognized.

B3c LUNNAN, A. Difficulties in initiating cooperation projects in farm forestry. In Norwegian; Eng. sum. Tidsskrift for Skogbruk 86(1): 25-28. 1978.

In spite of financial support from public sources, few cooperative projects have been established.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

B3c MC GOWIN, J. GREELEY, II. Private nonindustrial timberlands in the South. Paper presented at the General Sesseion, FPRS 32nd Annual Meeting, Jun 26, 1978, Atlanta. Forest Products Journal 28(10): 15-16, 18, 20. Oct 1978.

Forest productivity on private nonindustrial lands could be improved if landowners were given more favorable tax treatment.

B3c ROW, CLARK. Economies of tract size in timber growing. Journal of Forestry 76(9): 576-579, 582. Sep 1978.

Some private nonindustrial forest owners are not interested in growing timber because their tracts of land are too small to make growing timber profitable. Programs to assist forest owners should deal with each individual's situation and goals, and should not automatically recommend timber investment.

B3c TARRANT, ROBERT F., ROBERT A. EWING, and DONALD R. GEDNEY. Forest survey and the nonindustrial private ownerships. Journal of Forestry 76(8): 470-472. Aug 1978.

Socioeconomic factors affect timber production on private nonindustrial forest land. Forest surveys should take this into account.

B3c TOZER, R. B. Private woodland production forecasts, their value and factors affecting their accuracy. Scottish Forestry 32(4): 248-254. Oct 1978.

Estate production forecasts give a reasonably accurate prediction of future yields, while also providing other useful management information.

B3c ZIVNUSKA, JOHN A. Two studies of private nonindustrial forest lands, a critical review. Journal of Forestry 76(8): 467-469. Aug 1978.

Reviews two 1978 reports: "The Federal Role in the Conservation and Management of Private Nonindustrial Forest Lands," by U.S. Department of Agriculture; "Policy Alternatives for Nonindustrial Private Forests," by Roger A. Sedjo and David M. Ostermeier.

C2 DALGAS, K. F. Hedges and boundaries between forestry properties and adjoining agricultural holdings. In Danish; Eng. sum. Dansk Skovforenings Tidsskrift, pp. 107-117. 1978.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

Historical background of the Danish rules concerning hedges and boundary marks between forest properties and adjoining agricultural properties. Describes how to get the boundaries legally fixed.

C3 ARGOW, KEITH A., and DENNIS B. PROPST. Baseline resource inventory and management proposals for the Mountain Meadow Preserve in Carroll County, Virginia. School of Forestry and Wildlife Resources, Virginia Polytechnic Institute and State University. 111 pp. 1978.

Includes recommendations for forestry and wildlife management.

C3 BENE, J. G., H. W. BEALL, and A. COTE. The tropical forest: overexploited and underused. In Spa[illegible]. Conif. Serie Tecnica No. 5, 51 pp. May 1978.

Tropical forests: production systems, development constraints, research needs and priorities, and agroforestry possibilities.

C3 CUNNINGHAM, J. M. M., J. EADIE, T. J. MAXWELL, and A. R. SIBBALD. Interrelations between agriculture and forestry, an agricultural view. Scottish Forestry 32(3): 182-193. Jul 1978.

C3 HEINRICHS, JAY. Downeast showdown. American Forests 84(9): 16-21, 47-52. Sep 1978.

Two Indian tribes have laid claim to two-thirds of the state of Maine. They maintain that the land was taken illegally. Much of the land is owned by timber companies. The matter will be settled in court.

C3 HELLES, F., H. KRISTENSEN, and Aa. WALTER-JORGENSEN. Disposal of land for agricultural or forest purposes. Working papers (1-5) from a project concerning an investigation of decision possibilities and decision background material for the disposal of "open land." In Danish. Royal Veterinary and Agricultural University, Department of Forestry. 1977-78.

C3 STEWART, G. G. Interrelations between agriculture and forestry in the uplands of Scotland, a forestry view. Scottish Forestry 32(3): 153-181. Jul 1978.

D1 RICHARDSON, DENNIS. Bank defines criteria for future forestry investment. In English; Fre., Ger., and Spa. sum. World Wood 19(10): 33-34. Sep 1978.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

Asian Development Bank's criteria for making future investments in the forestry sector.

D1 RIIHINEN, PAIVIO. Stimulation of forestry and forest industry investments in Finland. In English; Ger. sum. In Proceedings of IUFRO Working Group 4.06.2--Forest policies for stimulating investment in developing countries. Mitteilungen der Bundesforschungsanstalt fur Forst- und Holzwirtschaft No. 117, pp. 42-54. Jun 1977.

Forest production goal and profitability of different timber production programs should be considered before making investment decisions. Forest policy measures used to implement an investment program among the woodland owners in Finland.

D1 SOLBERG, B. Game theory, a short introduction and some ideas for application in forest economic analysis. In Norwegian; Eng. sum. Tidsskrift for Skogbruk 86(1): 41-48. 1978.

Subjects relevant to the application of game theory in forestry: cooperation among forest owners, increase of forest industry capacity in a situation of limited timber supply, timber price negotiations, and conflicts between timber production and recreation interests.

III APPLIED TO FOREST PRODUCTION

A1 HELLES, FINN. On the theory behind multiple use in forestry. In Danish; Eng. sum. Dansk Skovforenings Tidsskrift, pp. 179-198. 1977.

In theory, it is easy to determine the optimal combination of products in multiple-use forestry to maximize net revenue. In reality, it is difficult to make practical use of the theory.

A1 JACKSON, JAMES P. We take from it. American Forests 84(11): 40-44, 46, 48. Nov 1978.

Deciduous forests provide wood products, watershed protection, wildlife habitat, recreation, and aesthetic beauty.

A1 MC ILROY, J. C. The effects of forestry practices on wildlife in Australia, a review. Australian Forestry 41(2): 78-94. Jun 1978.

Two prerequisites for multiple-use management of Australian forests are an increased knowledge of the biology of forest wildlife and greater awareness of the effects of the various forestry practices on wildlife populations. Wildlife populations are affected by road construction, stand improvement operations, and selective logging, clear-felling, and prescribed burning and wildfires. Multiple-use management plans should consider both wildlife conservation and timber production.

A1 SMOCK, BILL. Multiple use thrives at army ammunition plant. Forests & People 28(4): 9-12, 33-34. 1978.

Land at the Louisiana Army Ammunition Plant is managed for timber production and as a wildlife habitat. Plant's multiple-use management plan includes the cataloguing of all flora and fauna and the preservation of endangered species.

A1 ZIVNUSKA, JOHN A. Multiple use of forests. Scandinavian Forest Economics No. 18, pp. 38-43. May 1978.

Economists should be concerned not only with the economics of production, but also with the economics of administration.

A2 BABITS, GEORGE. Concerns and problems of the small grower. American Christmas Tree Journal 22(4): 25-27. Nov 1978.

Problems of the small Christmas tree grower.

A2 BEHLEN, DOROTHY. All about Christmas trees. American Forests 84(11): 36-39. Nov 1978.

III APPLIED TO FOREST PRODUCTION

A3 GRELEN, HAROLD E. Forest grazing in the South. Journal of Range Management 31(4): 244-250. Jul 1978.

Forage production in the South has been reduced by accelerated pine regeneration. Cattlemen, timber companies, and sportsmen differ in their attitudes toward forest grazing. Research is needed to evaluate the compatability of cattle, wildlife, timber, and other resources.

A3 SHORT, HENRY L., and CLAY Y. MC CULLOCH. Managing pinyon-juniper ranges for wildlife. USDA Forest Service Rocky Mountain Forest and Range Experiment Station Gen. Tech. Rep. RM-47, 10 pp. Nov 1977.

A5a(1) KOCH, N. ELERS. Forest recreation in Denmark, Part 1 The use of the country's forests by the population. In Danish; Eng. sum. The Danish Forest Experiment Station, XXXV, 3. 1978.

Survey showed length of stay, group composition, activities, travel time and distance, and means of transport.

A5a(3) COLLINGS, P. S., and A. J. GRAYSON. Monitoring day visitor use of recreational areas. Forest Record 112, Forestry Commission, HMSO, 23 pp. 1977.

Information obtained can lead to improved management of recreation areas.

A5a(3) KELLOMAKI, SEPPO. Recreational potential of a forest stand. In English; Fin. sum. Silva Fennica 12(3): 179-186. 1978.

To measure the recreation potential of a stand, relationship between selected recreation activities and the stand volume is determined and combined with information on trampling tolerance. Results emphasize the importance of varying the distribution of tree age classes in a recreation area.

A5a(3) VOLK, H. Recreation behavior in forests. In German; Eng. sum. Forstwissenschaftliches Centralblatt 97(4): 192-208. Aug 1978.

Interviewing visitors to recreation forests assists managers in recreation planning.

A5a(3) VORONIN, I. V., and L. I. KOSOVA. Classification of the properties of forests used for recreation. In Russian. Lesnoi Zhurnal No. 3, pp. 154-157. 1977.

Characteristics of forests used for recreation.

III APPLIED TO FOREST PRODUCTION

A5a(4) DUNCAN, DAVID, and RALPH MAUGHAN. Feet vs. ORVs: Are there social differences between backcountry users? Journal of Forestry 76(8): 478-480. Aug 1978.

In an Idaho study, few socioeconomic differences were found between recreationists who traveled on foot and those who used off-road vehicles. The educational level was higher for those who traveled on foot, while the income level was higher for those who used off-road vehicles.

A5a(4) GREIG, PETER J. Forecasting and evaluating the demand-response to changes in recreational site characteristics. Dissertation, Ph.D. University of Oxford. Jul 1977.

Method for forecasting the demand curves in forestry options where recreation characteristics might change.

A5a(4) WAGGENER, THOMAS R., and LAURA CEPERLEY (COMP). Economics of outdoor recreation demand, a bibliography of analytical and demand related literature. Cooperative Park Studies Unit, National Park Service, College of Forest Resources, University of Washington, Seattle. CPSU/UW S-78-2, 23 pp. Sep 1978.

Identifies major analytical literature of recreation demand published primarily in the United States through mid-1977. Contains over 250 citations.

A5b KEITH, J. E., J. R. GRAY, and W. E. JOHNSTON. Recreation snowmobiling in the West, a regional analysis. Utah State University Agricultural Experiment Station Bull. 498, 27 pp. 1978.

A5b MITCHELL, J. E., J. H. SCHOMAKER, and D. B. PROPST. Off-road vehicle users in Idaho, distribution and activity. University of Idaho, Forest, Wildlife and Range Experiment Station Bull. 20, 23 pp. 1977.

Most off-road vehicle activity in Idaho occurs on weekends on publicly owned lands, especially those administered by the Forest Service and the Bureau of Land Management.

A5e DOMOY, FRANCIS M., and DANIEL E. CHAPPELLE. A method for selecting a public campground site to achieve community objectives. Michigan State University Agricultural Experiment Station Res. Rep. 345, 28 pp. Feb 1978.

Land-use selection model for outdoor recreation planning assists public decision makers in locating feasible camping sites.

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A5e FRISSELL, SIDNEY S. Judging recreation impacts on wilderness campsites. Journal of Forestry 76(8): 481-483. Aug 1978.

Classification scheme is an aid to the inventory and management of campsites.

A5e VAN HORNE, MERLE J. Determining user-preferences for campsites, a method based on observed choice. Dissertation, Ph.D. Utah State University. 242 pp. 1977.

A5f CONRAD, A. H. Wilderness preservation, planning, and management: an annotated bibliography. Council of Planning Librarians, Monticello, Illinois. Exchange Bibliography 1516, 54 pp. 1978.

A5f JONES, J. GREG, WENDELL G. BEARDSLEY, DAVID W. COUNTRYMAN, and DENNIS L. SCHWEITZER. Estimating economic costs of allocating land to wilderness. Forest Science 24(3): 410-422. Sep 1978.

Costs can be determined for the least-cost wilderness areas, and for specifically designated areas of potential wilderness. Costs are influenced by forest management objectives as well as by amount and location of land previously designated as wilderness.

A5f STUART, THOMAS W. Multiobjective analysis of wilderness travel in grizzly bear habitat using parametric linear programming. Dissertation, Ph.D. University of California, Berkeley. 252 pp. 1977.

Management models for minimizing dangerous contacts between people and grizzlies during overnight backcountry trips in Glacier National Park, Montana.

A5g BUHYOFF, GREGORY J., and WILLIAM A. LEUSCHNER. Estimating psychological disutility from damaged forest stands. Forest Science 24(3): 424-432. Sep 1978.

Quantifies aesthetic impact of bettle-damaged stands.

A5g HAMMITT, WILLIAM E. Visual and user preference for a bog environment. Dissertation, Ph.D. University of Michigan. Aug 1978.

A7 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Forestry Department. Report on the importance of hunting in European forestry. In English and French. 18th Session of the European Forestry Commission, Rome, Sep 13, 1977. Rome. 7 pp. 1977.

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A7 TOWELL, WILLIAM E. Needed: a wildlife ethic. American Forests 84(9): 8-9, 46-47. Sep 1978.

Six guidelines for resolving major forestry-wildlife conflicts.

A8 ANDRESEN, JOHN W. The greening of urban America. American Forests 84(11): 10-12, 56-61. Nov 1978.

Urban forestry.

A8 GREY, GENE W., and FREDERICK J. DENEKE. Urban forestry. John Wiley & Sons, Inc., New York. 279 pp. 1978.

Social, economic, and biological aspects of the urban forest. Includes: History of urban forestry; Distribution and ownership of the urban forest; Benefits of the urban forest; Management of the urban forest; Monetary values of the urban forest; and Urban forestry issues.

A8 HULTMAN, S. G. Urban forestry in the USA. Descriptions and lessons for Sweden. In Swedish. Sveriges Skogsvardsforbunds Tidskrift 75(4): 299-321. 1977.

Contrasts urban forestry in the U.S. with urban forestry in Sweden. In the U.S., the emphasis is on aesthetic values. In Sweden, urban fringe forests combine timber production, recreation, and amenity management. More emphasis should be given in Sweden to social aspects, visitor centers, and management for multiple use.

B1 BINGHAM, CHARLES W. Utilization of America's hardwood resource. Forest Products Journal 28(10): 21-22. Oct 1978.

U.S. hardwood resource is tremendously underutilized.

B1 BRETT, PAUL, and HENRY BENSKIN. Guidelines for cost-effective intensive forest management in B.C. Pulp and Paper Canada 79(9): 66-68, 70, 72, 75. Sep 1978.

Intensive forest management is one way to combat wood supply shortage in British Columbia.

B1 DU TOIT, A. J. The forest industry's solution for the projected wood fibre shortage of the future. South African Forestry Journal No. 104, pp. 20-24. Mar 1978.

Utilizing forest residues is one way to combat the wood fibre shortage. However, residue utilization is not always practical or economical.

III APPLIED TO FOREST PRODUCTION

B1 F.L.C. REED AND ASSOCIATES LTD. Forest management in Canada. Vol. 1. Canadian Forestry Service Information Report FMR-X-102, Forest Management Institute, Ottawa. 155 pp. Jan 1978.

Timber supply situation in Canada. Canada is facing a timber shortage. More intensive timber management is needed.

B1 GOLDSTEIN, IRVING S., D. LESTER HOLLEY, and EARL L. DEAL. Economic aspects of low-grade hardwood utilization. Forest Products Journal 28(8): 53-56. Aug 1978.

Whole-tree chips from low-grade hardwoods are suitable for direct combustion, conversion into chemicals, and conversion into fibreboard. Such processes appear to offer attractive returns on investment.

B1 MITCHELL, P. L. The case for increased wood production in developed countries. In English; Fre. and Spa. sum. Commonwealth Forestry Review 57(2): 127-132. Jun 1978.

Wood will be needed in the future not only for its current uses but also for some new ones. Rather than relying on developing countries for their wood needs, developed countries should instead increase their own wood production. Problems of allocating land, labor, and capital for increased wood production could be overcome.

B1 NEWNHAM, R. M. Forest management in Canada. Summary. Environment Canada, Canadian Forestry Service, Forest Management Institute, Ottawa, Inf. Rep. FMR-X-104, 55 pp. 1978.

Summary of F.L.C. Reed report cited previously.

B1 WISDOM, HAROLD W. Will steadily rising energy costs have an effect on timber supply? Forest Industries 105(1): 78. Sep 1978.

Increased use of wood for fuel would probably have little impact on timber supply since it would involve mill and logging residues and currently unused wood. Important effect of the energy crisis on timber supply is the possible impact on the cost of harvesting and processing wood products. Cost of energy affects not only the wood-using industry, but also its competitors. How the wood-using industry will fare depends upon its ability and that of its competitors to absorb the additional energy costs.

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B3 ANDERSON, GEORGE A. Effects of intensive pine plantation management on southern wood supply and quality. Tappi 61(10): 85-89. Oct 1978.

Intensively managed southern pine plantations grown by forest industry on relatively short rotations will result in greatly increased harvests by 1983. In order to meet the total demand for southern pine, the South will have to increase at once the acreage of intensively managed plantations on both public and private lands.

B3 CHEAH, L. C. Forest regeneration and development options in Peninsular Malaysia today. Malaysian Forester 41(2): 171-175. Apr 1978.

B3 DARGAVEL, J. B. A model for planning the development of industrial plantations. Australian Forestry 41(2): 95-107. Jun 1978.

A 25-year planning system was developed for a plantation operation in Victoria. Linear programming was applied to yield control, the selection of intensive silvicultural methods, and capital rationing.

B3 FORESTRY CHRONICLE. Tax incentives for investment in intensive forestry. A study of Working Group #9: Policy and Economics, Canadian Institute of Forestry. Forestry Chronicle 54(3): 167-170. Jun 1978.

Canadian government should change the Income Tax Act and Regulations to encourage forest operators to invest in current reforestation activities. It should negotiate long-term cost-sharing agreements with provincial governments to handle the backlog of regeneration needs.

B3 LAAKKONEN, OLAVI. An economic model for selecting production alternatives in a forest nursery. In Finnish; Eng. sum. Finnish Forest Research Institute 93(3): 95 pp. 1978.

Economics of nursery stock production planning in Finland's central forest tree nurseries.

B3 NEWTON, MICHAEL. Test of western hemlock wildlings in brushfield reclamation. Oregon State University Forest Research Lab. Res. Pap. 39, 22 pp. Jul 1978.

B3 STREEBY, LARRY L. Economic aspects of reforestation planning on woodland properties. Oregon State University Extension Bull. 834, 12 pp. 1977.

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Criterion for evaluating reforestation alternatives. Accounts for inflation in benefit projections and relates reforestation activities to future stand-management regimes.

B3 WYK, G. VAN. Does tree improvement influence the harvesting and transport of trees? In English; Afr. sum. South African Forestry Journal No. 105, pp. 13-17. Jun 1978.

An increase in straightness and volume production results in bigger logs so that yields are greater and handling costs are reduced. Desirable branch features limit the amount of debris in the plantation and ensure a better quality product to the sawmiller. To the pulpmiller, increased wood density results in more cellulose per unit volume.

B4 BALMER, WILLIAM E., KEITH A. UTZ, and O. GORDON LANGDON. Financial returns from cultural work in natural loblolly pine stands. Southern Journal of Applied Forestry 2(4): 111-117. Nov 1978.

Volume growth of natural stands of loblolly pine can be substantially increased through cultural practices. Financial returns can be increased over 200 percent by controlling large hardwoods. Volume growth and financial returns will increase with each additional level of cultural treatment so long as costs are reasonable and adequate markets are available.

B4 KELTIKANGAS, M., and K. SEPPALA. The economics of growing birch on drained peatland. In Finnish; Eng. sum. Silva Fennica 11(1): 49-68. 1977.

Discounted timber yield for thinned birch stands was 10 percent greater than for unthinned stands.

B4 MARTELL, C. C. Contract thinnings. Quarterly Journal of Forestry 72(4): 221-223. Oct 1978.

Woodland owner outlines problems in contract thinning, particularly those affecting the firm, the area manager, the subcontractors, the client, and the market.

B4 TAYLOR, R. W. Harvesting productivity in first thinnings. In English; Afr. sum. South African Forestry Journal No. 105, pp. 33-34. Jun 1978.

Comparison of methods on the basis of productivity and cost.

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B4 VON ALTHEN, F. W., W. M. STIELL, and R. B. FORSTER. Effects of four thinnings on the growth, yields, and financial returns of a 62-year-old red pine plantation. In English; Fre. sum. Forestry Chronicle 54(5): 253-260. Oct 1978.

B5 ADAMS, D. M., R. W. HAYNES, and D. R. DARR. Alternative techniques for analysis of price effects of changes in national forest timber flows: a background report. USDA Forest Service Pacific Northwest Forest and Range Experiment Station Gen. Tech. Rep. PNW-60, 18 pp. 1977.

Price changes affected by public actions increasingly influence harvest policies for the national forests. Summary of methods to evaluate these price linkages and outline of their impact on stumpage and wood products prices.

B5 ADAMS, DARIUS M. Effects of national forest timber harvest on softwood stumpage, lumber, and plywood markets: an econometric analysis. Oregon State University Forest Research Laboratory Bull. 15, 50 pp. 1977.

Price, consumption, and production impacts of shifts in national forest timber harvest on a regional and national basis, and anticipated market impact. Model of national softwood products and stumpage markets simulates several alternative national forest harvest policies.

B5 DIXON, BRUCE L. A stochastic control approach to harvest scheduling in a national forest. Dissertation, Ph.D. University of California, Davis. 1976.

B5 DUERR, WILLIAM A. Some financial optima for timber. Scandinavian Forest Economics No. 18, pp. 3-7. May 1978.

A derivation of formulas for financially optimal timber rotation and stock. Two contrasting cases are examined: (1) the case of divisible capital, such as a seletion forest or regulated forest of even-aged stands, and (2) indivisible capital, such as a tree or an even-aged forest where degree of thinning is not a variable. The Faustmann relationship is appropriately applied to case 2, not to case 1.

B5 GODMAN, RICHARD M., and JOSEPH J. MENDEL. Economic values for growth and grade changes of sugar maple in the Lake States. USDA Forest Service North Central Forest Experiment Station Res. Pap. NC-155, 16 pp. 1978.

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Current and expected rates of value increase over a 10-year period for sawtimber-size sugar maple based on variable growth rates, expected merchantable height changes, and butt log grade improvements. These economic guides, along with silvicultural considerations, provide a value basis for selecting trees during thinning and for determining final harvest size.

B5 ROSE, DIETMAR W., and DEAN S. DE BELL. Economic assessment of intensive culture of short-rotation hardwood crops. Journal of Forestry 76(11): 706-711. Nov 1978.

Intensive culture of short-rotation hardwood crops is economically feasible in some situations. Hardwood crops coppiced in 4- and 10-year cycles at spacings of 4 by 4 feet and 12 by 12 feet, respectively, appear to be economically feasible, while 2-year coppice rotations do not.

C DOWNING, KENT B., and CYNTHIA M. MOUTSINAS. Managers' views of dispersed recreation along forest roads. Journal of Forestry 76(9): 583-585. Sep 1978.

Survey of public and private natural-resource managers in the Pacific Northwest showed that they favor dispersed recreation along forest roads.

C HUGGARD, E. R. Optimum forest road spacing. Quarterly Journal of Forestry 72(4): 207-210. Oct 1978.

In Great Britain.

C KANT, HARI, and K. G. SOOD. Studies on truck transportation of timber. In English; Hin., Ger., and Fre. sum. Indian Forester 104(5): 321-330. May 1978.

How road standard affects the cost of timber transportation by trucks.

C KOLENKA, I. Problems of optimum timber transportation In Czech; Rus., Eng., and Ger. sum. Lesnicky Casopis 24(3): 233-241. 1978.

Using linear programming to develop optimum transportation plans in forest management.

D1 MARTELL, D. L. A subjective measure of forest fire management effectiveness. Forestry Chronicle 54(3): 159-162. Jun 1978.

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Technique measures not only the amount of money spent in forest fire management, but also the value of timber and property saved.

D1 OMI, PHILIP N. Long-term planning for wildland fuel management programs. Dissertation, Ph.D. University of California, Berkeley. 142 pp. 1977.

Framework for analyzing and planning investments in fuelbreak construction for a large southern California forest.

D3 HALL, RALPH C. Beetle damage severe in no. 2 lumber state. Forest Industries 105(12): 68. Nov 1978.

Insects caused 10 times as much mortality as fires did in California forests in 1977. Insect epidemic could result in a $2 billion loss of the forest resource.

D3 STEVENS, FRED, and WILLIAM SCHABAS. Budworm fighters seek new weapons. Pulp and Paper Canada 79(10): 22-26, 28, 30. Oct 1978.

New Brunswick's forest industry, government, and public are searching for a safe, effective, economic control of the budworm.

D3 THOMAS, J. B. A review of the economic impact of insects on the genus Populus in Ontario. Canadian Forestry Service, Sault Ste. Marie, Ont. Rep. O-X-271 45 pp. 1978.

D4 GJØLBERG, R. The economic importance of decay in old Norwegian spruce. In Norwegian; Eng. sum. Tidsskrift for Skogbruk 86(1): 13-16. 1978.

Trees from 15 stands are examined. Total loss varies from 4.6 percent to 8.9 percent.

E ALDRICH, ROBERT C. A national multiresource inventory system: possibilities, problems, and progress. In Integrated inventories of renewable resources, proceedings of the workshop, Gyde H. Lund, et al. pp. 474-480. USDA Forest Service Rocky Mountain Forest and Range Experiment Station Gen. Tech. Rep. RM-55, 482 pp. 1978.

E BERNAUER, B. Utilization value analysis, cost-benefit analysis, and modified investment reckoning as a basis for decisions on marginal yield areas. In German. Allgemeine Forstzeitschrift 32(30): 760, 762, 764. 1977.

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E CANONIZADO, JEREMIAS A. Simulation of selective forest management regimes. Malaysian Forester 41(2): 128-142. Apr 1978.

Simulation program of a Malaysian firm.

E CHATTERJEE, N. Single factor analysis, a decision criterion for forestry operations. In English; Hin., Ger., and Fre. sum. Indian Forester 104(7): 506-516. Jul 1978.

Single factor analysis provides forest managers with a quantitative basis for determining forestry operations. Theoretical framework is developed to assess the financial impacts of weeding and cleaning in forest plantations.

E CHOWDHARY, R. L. Rationalizing social forestry objectives. In English; Hin., Ger., and Fre. sum. Indian Forester 104(3): 206-211. Mar 1978.

Need for sorting out the goods and services of nontimber forestry from those of timber forestry so that appropriate financing can be sought for both branches.

E CHRISTENSEN, J. B., and F. HELLES. Forestry investment decisions under uncertainty. In Danish; Eng. sum. Dansk Skovforenings Tidsskrift, pp. 40-74. 1978.

Two methods of solving decision problems by means of subjective probability distributions.

E DIETZLER, DAVID A., and CHARLES A NEYHART, JR. Selected issues of financial accounting and reporting for timber. Oregon State University, School of Business. 8 pp. Nov 1978.

Evaluation of current accounting practices for timber cutting contracts, advance deposits on these contracts, and timber depletion, with recommendations for improved reporting of these items.

E F.L.C. REED AND ASSOCIATES LTD. Forest management in Canada. Vol. II, Case studies. Canadian Forestry Service Information Report FMR-X-103, Forest Management Institute, Ottawa. 207 pp. 1978.

Five case studies illustrate the potential costs, benefits, and problems of specific management situations.

E HELLES, FINN. On the theory of external effects, as applied to forestry. In English. Royal Veterinary and Agricultural University, Copenhagen. Department of Forestry report, Series 2, Studies No. 6. 1978.

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External effects upon forestry are illustrated with Danish examples. Such effects produce compensating responses in forestry. The total change is evaluated by the standard of the Pareto optimum, an evaluation whose outcome is shown to be highly dependent on institutional forces such as legal constraints.

E HELLES, FINN, E. MOSEKILDE, and L. W. RANFELT. On the use of system dynamics in forestry. In Danish; Eng. sum. Dansk Skovforenings Tidsskrift, pp. 230-253. 1978.

Usefulness of simulation method is demonstrated on the problem of choosing a cutting program in Norway spruce.

E LAAR, A. VAN. Towards a national forest inventory. South African Forestry Journal No. 104, pp. 3-10. Mar 1978.

Factors which need to be considered when planning an inventory.

E MALAJCZUK, GEORGE. A model for the planning of timber production management. Dissertation, Ph.D. Yale University. 197 pp. 1978.

Operations research model provides public forest enterprises with a framework for building useful models for management planning.

E OVEREND, MILES. Satellite imagery will aid forest management. Canadian Forest Industries 98(8): 35, 37. Aug 1978.

Data from aerial satellites will soon be providing government and industrial foresters in British Columbia with an update every 18 days on changes in forests.

E RIIHINEN, PAIVIO. Economics of forestry investments. In Finnish; Eng. sum. Metsa Ja Puu No. 2, pp. 4-6. 1978.

Hierarchy of decisions at different institutional levels which control the conditions of profitability of forest improvement investments.

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Cutting regime, silvicultural system, and logging system are considered management strategy alternatives. Model determines their impacts on a forest stand.

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E SMITH, J. HARRY G. Intensive forestry on the West Coast. Forestry Chronicle 53(3): 140-146. Jun 1978.

Intensive forest management on Canada's West Coast requires increased inputs of labor, capital, and knowledge in order to enhance the amount and value of yields from an ultimately limited land base. Incentives are needed for private landowners and users of public forest lands to sustain current yields of wild stands, to avoid a falldown in harvest as surplus old growth values are liquidated, and to make up for withdrawals from the land base and complications of timber management.

E STEUER, RALPH E., and ALBERT T. SCHULER. An interactive multiple-objective linear programming approach to a problem in forest management. Operations Research 26(2): 254-269. Mar/Apr 1978.

The main problem of mathematical programming designed for multiple-use forest management is assessing the appropriate criterion weights required. Interactive multiple-objective linear programming does not require any criterion weights. The procedure uses a combination of linear programming and vector-maximizing.

E SVENDSRUD, ASBJORN. Viewpoints on profitability in forestry. Scandinavian Forest Economics No. 18, pp. 31-37. May 1978.

Profitability in timber production.

E TEDDER, PHILIP L. An evaluation of forest management alternatives in southeast Oklahoma under differing economic and silvicultural assumptions. Disseration, Ph.D. Oklahoma State University. 171 pp. 1976.

Alternative situations for the study area were proposed and simulated on 2 forest management models. Significant differences in harvest levels and cash flows were observed with each of the models.

E WILLAN, R. L. Tropical forest developments need special approaches. World Wood 19(10): 19. Sep 1978.

Tropical forest areas need special approaches to resource evaluation and appraisal. Assessment systems are needed for the most efficient use of the forest resource.

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A1b WISDOM, HAROLD W., and TIMOTHY G. HUDSPETH. Virginia's forest products industry. Virginia Polytechnic Institute and State University, School of Forestry and Wildlife Resources FWS-3-78, 55 pp. 1978.

Economic analysis of Virginia's forest products industry, based on a special survey of wood use by the state's primary wood-using firms in 1976.

A1d EISENHAUER, G. Utilization of natural forests in Chile. Applied Sciences and Development 9, pp. 159-166. 1977.

Methods used locally in felling, cross-cutting, skidding, loading, transport, and sawmilling. Social and economic effects of mechanization. Need for utilization of less valuable timber and for an effective forestry organization.

A1e BREITHAUPT, H. The forest and timber industry of Colombia. In German. Holzindustrie 30(11): 343-345. 1977.

A1e SWIDERSKI, JOSEF. Small-scale plants, their role is essentially practical. World Wood 19(10): 25-26. Sep 1978.

Using modern technology in small-scale plants in developing countries. The plants should be economically practical, use local raw materials and manpower, and supply a local market need.

A2 1979 POST'S PULP AND PAPER DIRECTORY. Miller Freeman Publications, San Francisco. 1978.

U.S. and Canada.

A3 KEPHART, GEORGE S. Campfires rekindled. Channing Books, Marion, Massachusetts. 156 pp. 1977.

Life and work in the Maine woods during the 1920s, from the viewpoint of a paper company forester who was there.

A3 ODEN, JACK P. Origins of the southern kraft paper industry, 1903-1930. Mississippi Quarterly 30, pp. 565-584. Fall 1977.

A4 GOMEZ, G. E. Some topics of financing and investment of pulp and paper projects, a case study in Colombia. In English, Spanish, and French. Food and Agriculture Organization of the United Nations Advisory Committee on Pulp and Paper. Expert Consultation on World Pulp and Paper Demand, Supply and Trade, Tunis, Sep 20, 1977. Rome. 16 pp. 1977.

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A4 KEIPI, KARI. Approaches for functionally decentralized wood procurement planning in a forest products firm. In English; Fin. sum. Communicationes Instituti Forestalis Fenniae 93.4, Helsinki. 116 pp. 1978.

Seven approaches to decentralized wood procurement planning in a Finnish forest products firm. The total wood procurement plan coordinates the purchase, logging, and transportation schedules.

B2 HARSTELA, PERTTI, and LEO TERVO. Comparison of methods for harvesting in sapling stands. In Finnish; Eng. sum. Silva Fennica 12(2): 79-84. 1978.

Cost comparison of 3 harvesting methods: systematic fully mechanized harvesting, selective fully mechanized harvesting, and manual felling combined with whole-tree chipping.

B2 MARKOV, LAZAR. Integrated industry complexes and whole-tree processing rationalize forestry. In English; Fre., Ger., and Spa. sum. World Wood 19(10): 42-44. Sep 1978.

High resource utilization is the prime objective of the Soviet Union in developing new process capacity in the timber areas of Siberia and the Soviet Far East.

B2 MORLEY, PETER M. Optimizing the wood resource. Study of integrated logging operations in eastern Canada. Forest Products Journal 28(10): 73-76. Oct 1978.

Study of several pulp and paper companies' logging operations shows how the change from single product to integrated or multiproduct operations was achieved.

B3a SINCLAIR, STEVEN A. Utilization potential of beetle-killed southern pine sawtimber. Dissertation, Ph.D. Virginia Polytechnic Institute and State University. 117 pp. 1978.

Profitable utilization of beetle-killed southern pine sawtimber is highly dependent on the current structure of applicable lumber grading rules, harvesting costs, and lumber market conditions.

B3b WAHLGREN, H. GUS, and THOMAS H. ELLIS. Potential resource availability with whole-tree utilization. Tappi 61(11): 37-39. Nov 1978.

IV APPLIED TO MANUFACTURING

Large amounts of forest residues on commercial forest land could be used for pulp, paperboard, fuel, or fiber products. Forest survey techniques must be modified to include estimates of the full tree.

B3b WAHLGREN, H. GUS. Tapping the forest resource. American Forests 84(10): 24-27, 60-61. Oct 1978.

See preceding annotation.

B3b ZUMBO, JIM. Impacts of the wood-for-energy push. American Forests 84(10): 38-41, 46, 48-50. Oct 1978.

Increased use of wood for fuel will result in the utilization of logging residues. Removal of logging residue will have a tremendous impact on the forest ecosystem, and will significantly alter modern forestry practices.

B4 GOCHENOUR, DONALD L., JR., EDWARD L. FISHER, and CLEVELAND J. BILLER. An analytical appraisal of cable logging technique in Appalachia. Forest Industries 105(11): 80-83. Oct 1978.

Production and cost figures.

B4 MITRA, S. K., and K. G. SOOD. A study of transportation of timber by long distance conveyor Lasso-35 in West Bengal. In English; Hin., Ger., and Fre. sum. Indian Forester 104(3): 159-170. Mar 1978.

Cost study of aerial transportation units.

C1c LEFEBVRE, ED. How improper log bucking reduces lumber revenues. Canadian Forest Industries 98(9): 21, 24-25. Sep 1978.

In British Columbia, the potential value lost to chippable residue because of misbucked logs is approximately $23 million per year.

C1c NIELSON, R. W. Economics of protective treatments for unseasoned hem-fir lumber. Environment Canada, Western Forest Products Laboratory Information Rep. VP-X-174, 22 pp. Feb 1978.

Analyses of return on investment for 3 protective treatments for lumber shipments to the U.K. and the U.S.: anti-sapstain treatment, kiln drying, and Timborising.

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C1c SOLBERG, B., and D. B. FREEMAN. Effects of mill location, size, and input characteristics on the economic efficiency of Kenya's forest industries. Journal of Economic and Social Geography 69(3): 141-153. 1978.

Empirical analysis of Kenya's sawmilling industry.

C1c SOLBERG, B., M. FERGUS, A. SEIM, and R. SKAAR. Evaluation of the Sao Hill Saw Mill Project, Tanzania. Norwegian Agency for International Development, Oslo. 207 pp. Oct 1977.

Detailed evaluation of a sawmill project financed partly by Norway.

C1c SOLBERG, B., M. FERGUS, A. SEIM, and R. SKAAR. Preliminary appraisal of Mbeya Saw Mill, Tanzania. Norwegian Agency for International Development, Oslo. 43 pp. Jan 1978.

Technical, financial, and economic appraisal of investment in sawmilling in this area of Tanzania.

C2a BRAUNSPERGER, MANFRED. What lies ahead for German paper industry? In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(11): 51-52, 76. Oct 1978.

Operating rates are about 87 percent in the West German paper industry. Prices are low. Firms are investing in mill rationalization and expansion rather than in the construction of new mills.

C2a EDWARDS, J. RODNEY. Wastepaper use and collection, what challenges face industry? Pulp and Paper 52(11): 134-136. Oct 1978.

Present status and future prospects for expanded wastepaper recycling. Market operation, collection methods, and government intervention.

C2a HØSTELAND, J. E. Production and inventory fluctuations in the cellulose industry. A system dynamic study. In Norwegian; Eng. sum. Rep. No. 1/1978. Department of Forest Economics, Agricultural University of Norway. 10 pp. 1978.

Causes for fluctuation in inventory, production, sales, and prices in the industry.

C2a JAPAN PAPER ASSOCIATION. Pulp & paper statistics 1978. Japan Paper Association, Tokyo. 25 pp. May 1978.

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1977 was a disappointing year for Japanese pulp and paper industry because of low demand, high inventories, low capacity utilization, and increased imports.

C2a KALISH, JOHN. German Democratic Republic. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(7): 35-43. Jul 1978.

Pulp and paper industry in the German Democratic Republic.

C2a MIES, WILL. Forest products prospects in North America. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(11): 58-60. Oct 1978.

Paper consumption should follow GNP growth. White paper market should continue to flourish.

C2a PULP AND PAPER. U.S. mills have edge over Canadians in news, pulp manufacturing costs. Pulp and Paper 52(10): 108-112. Sep 1978.

Canadian government study shows that Canadian producers are not cost competitive with their U.S. counterparts.

C2a PULP AND PAPER INTERNATIONAL. Review Number 1978. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(8): 184 pp. Jul 25, 1978.

Status and trend of pulp and paper industry throughout the world. Information on production, consumption, and trade. Reports from individual countries.

C2A STYAN, G. E. TMP's great growth potential in Canada. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(11): 53-57. Oct 1978.

Twice as many thermomechanical pulping mills as kraft mills should be in operation in Canada in the next 5 years.

C2b BUSH, SHARON W. The closed mill concept. Tappi 61(10): 54-56. Oct 1978.

Because environmental protection is a national aim and because this has led to vigorous demands for cleaning up the nation's water resources, considerable attention is being given by the paper industry to all matters which deal with closing up process systems.

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C2c BAYLISS, MARTIN. EEC drives for higher wastepaper usage. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(9): 37-41. Aug 1978.

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C2c BAYLISS, MARTIN. Wastepaper scheme saves money and trees. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(7): 48-49. Jul 1978.

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C2c BELLAMY, THOMAS R. Southern pulpwood production, 1977. USDA Forest Service Southeastern Forest Experiment Station Res. Bull. SE-46, 21 pp. Oct 1978.

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C2c BLYTH, JAMES E., and W. BRAD SMITH. Pulpwood production in the Lake States by county, 1977. USDA Forest Service North Central Forest Experiment Station Res. Note NC-238, 4 pp. 1978.

Pulpwood production in Michigan, Minnesota, and Wisconsin increased from 4.69 million cords in 1976 to 4.74 million cords in 1977.

C2c BONES, JAMES T., and DAVID R. DICKSON. Pulpwood-1976. USDA Forest Service Northeastern Forest Experiment Station Res. Bull. NE-53, 23 pp. 1977.

Pulpwood production in the Northeast: 1976 compared with 1975; trends, 1963-1976; pulp mills operating in 1976.

C2c BUBLITZ, W. J. Regional differences in United States wood procurement for the paper industry. Tappi 61(11): 49-55. Nov 1978.

Survey of pulp mills to determine wood procurement practices.

C2c IANNAZZI, FRED D. Wastepaper, worth more for its fiber value or as a fuel source? Pulp and Paper 52(9): 140-143. Aug 1978.

IV APPLIED TO MANUFACTURING

Old newsprint and corrugated containers are now worth more as fiber than as fuel. Burning paper should not be considered a potential solution to the energy shortage problem. It would furnish only about 1 percent of the nation's energy needs.

C2c LIBACK, KENNETH. The suitability of mixed tropical hardwoods for pulp and paper manufacture. Scandinavian Forest Economics No. 18, pp. 13-19. May 1978.

Mixed tropical hardwoods can be used successfully for the manufacture of pulp and paper. Certain grades of these pulp and paper products could be competitive even on international markets.

C2c LINTU, LEO. Panels, paper and paperboard from agricultural residues. Unasylva 29(118): 12-17.

Bagasse, straw, cotton linters, and flax tow are used as raw materials in the panel and paper and paperboard industries.

C3c BLYTH, JAMES E., and JEROLD T. HAHN. Veneer-log production and receipts, North Central Region, 1976. USDA Forest Service North Central Forest Experiment Station Res. Bull. NC-36, 17 pp. 1978.

In 1976 veneer log production was up 1 percent from 1974 in the Lake States and down 6 percent in the Central States. In 1976 veneer log receipts were down 2 percent from 1974 in the Lake States and down 9 percent in the Central States.

C3c BONES, JAMES T., and DAVID R. DICKSON. Veneer, 1976—a periodic assessment of regional timber output. USDA Forest Service Northeastern Forest Experiment Station Res. Bull. NE-55, 13 pp. 1978.

Veneer log production in the Northeast increased 4 percent between 1972 and 1976, while veneer log reciepts decreased 2 percent. Present and future trends for the industry. List of veneer plants in the Northeast.

C3c WORLD WOOD. Old rubber trees are raw material for new board process. World Wood 19(10): 45. Sep 1978.

Tests indicate that rubberwood from trees that have ceased to bear latex can be used for both core and veneer in the manufacture of stripboard.

IV APPLIED TO MANUFACTURING

C4 LEMPICKI, E. A., G. H. PIERSON, and GEORGE NISKALA. Wood residue utilization program in New Jersey. Forest Products Journal 28(10): 83-85. Oct 1978.

A cooperative effort by the Forest Service and the New Jersey Bureau of Forestry has coordinated the reuse of wood residues by wood manufacturers. As of June 1977, markets were found for over 1.8 million cubic feet of wood residues.

C4 YOUNG, CHARLES E. Profits from wood chips, a history. Wood & Wood Products 83(11): 35. Nov 1978.

C7 SENA. The Colombian furniture industry. In Spanish. Colombian Learning Service, Bogota. 111 pp. Jan 1978.

Structure, production, marketing, education needs, participation in the Colombian economy.

C8 ARNOLD, J. E. M., and JULES JONGMA. Fuelwood and charcoal in developing countries, an economic survey. Unasylva 29(118): 2-9.

In developing countries, approximately 86 percent of wood consumed annually is used as fuel. Ways to meet the growing demand for fuelwood: more efficient use of wood, better management of fuelwood forests, greater use of charcoal, and joint production of fuelwood and other crops.

C8 FULLER, FRED E. Things to consider before switching to wood residue as a fuel. Wood & Wood Products 83(10): 23-25. Oct 1978.

C8 RESLER, REXFORD A. Energy, a glimpse into the future. Forest Farmer 37(9): 8-9, 32-34. Jul/Aug 1978.

Wood should be thought of as part of any new mix of energy sources. No one energy source is enough. The wood products industry has been innovative in its use of wood waste for fuel. Forest residues could be another source of fuel. Research is needed to determine how best to harvest, accumulate, and process the residues economically.

C8 RIPLEY, THOMAS H., and RICHARD L. DOUB. Wood for energy, an overview. American Forests 84(10): 16-19, 42, 44, 46. Oct 1978.

Strong national policies and programs are needed so that forests will not be destroyed.

IV APPLIED TO MANUFACTURING

C8 SHIRLEY, RAY. Timber stand improvement for energy. Forest Farmer 37(9): 13, 35-36. Jul/Aug 1978.

Achieving widespread wood energy use requires simultaneous development of harvesting, fuel processing, and wood combustion techniques.

C8 SINGH, R. V. Solution of energy crisis in rural area lies in farm forestry. In English; Hin., Ger., and Fre. sum. Indian Forester 104(7): 465-477. Jul 1978.

There is a shortage of fuelwood for cooking in rural India. Energy plantations will not be able to meet the demand for fuelwood. Farm forestry practices by villagers could help alleviate the shortage.

C8 WHITE, E. W. Charcoal, fuel for thought. American Forests 84(10): 20-23, 56, 58. Oct 1978.

Charcoal could be the favored high-grade fuel derived from wood.

C8 ZERBE, JOHN I. The many forms of wood as fuel. American Forests 84(10): 32-35, 52, 54. Oct 1978.

Including pelletized, pulverized, liquified, and gasified wood.

C8 ZERBE, JOHN I. The role of wood in the energy crisis. Forest Farmer 37(9): 18-19, 34-35. Jul/Aug 1978.

C10 CASSENS, DANIEL L. Importance of wood deterioration in single-family residences for East Baton Rouge Parish, Louisiana. Forest Products Journal 28(8): 19-24. Aug 1978.

Substantial numbers of homes are damaged by wood decay and termites. Biological damage directly affects homeowners whose property is being devalued, individuals in the building trades, home lending institutions, and pest control operators. Indirectly it affects everyone, since it depletes the forest resource and results in higher prices for basic building materials.

C11 GOLDSTEIN, IRVING S. Wood may replace oil as source for chemical industry raw materials. In English; Fre., Ger., and Spa. sum. World Wood 19(10): 35-36. Sep 1978.

IV APPLIED TO MANUFACTURING

Industrial societies rely upon synthetic materials produced from petroleum-derived chemicals. Since oil supplies are finite and wood is a renewable resource, it might be feasible to process raw materials for industrial chemical production from whole-wood or its components. More research into the chemical utilization of wood is needed.

C11 SHARMA, S. N., PREM NATH, and P. G. GUPTA. Some small-scale industries based on timbers of the Himalayan region of Utter Pradesh. In English; Hin., Ger., and Fre. sum. Indian Forester 104(6): 421-430. Jun 1978.

Manufactured goods include: compressed wood shuttle blocks, cotton mill pirn blocks, pencil slats, tool handles, tent mallet heads, semi-finished frames for tennis and badminton rackets, and mathematical instruments.

D3 NOLFI, JAMES R., GEORGE C. BURRILL, and MICHAEL R. MILTNER. Chapter one: Maple production in Vermont, a process analysis investigation of energy utilization. In Energy Utilization in Vermont Agriculture, Part I, Center for Studies in Food Self-Sufficiency, Burlington, Vermont. pp. vii-35. 1976.

Present state of on-site maple producing technology in Vermont.

D4 HANDMER, R. W. Eucalyptus oil industry in central Victoria. Thesis, Diploma of Forestry (Victoria), Librarian, Forests Commission Victoria, P.O. Box 4018, GPO Melbourne 3001, Australia. 140 pp. 1978.

Australia's eucalyptus oil industry which dominated the world market for 80 years has declined during the past 20 years. Current operations are marginally profitable. Present day management, market prospects, and yields from natural reserves. Industry can be made more stable by further research and field application of improved management.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

A1 OSTERMEIER, DAVID (ED). Marketing and utilization of yellow poplar. Proceedings of a symposium sponsored by the Dept. of Forestry, Wildlife and Fisheries, Univ. of Tennessee, Tennessee Valley Authority, and USDA Forest Service, Mar 21-22, 1978. Institute of Agriculture, University of Tennessee. 182 pp. Sep 1978.

Includes: Outlook for wood products requirements (R. Stone); The harvest of yellow-poplar timber can be doubled (S. Boyce and J. McClure); Present and future supplies of yellow-poplar stumpage (G. Wells); Markets for yellow-poplar, past and present (W. Smith); Characteristics of yellow-poplar wood and implications toward marketing opportunities (H. Core): A systematic approach to market opportunity analyses (R. Woodruff); Yellow-poplar studs, would they be adopted? (B. Schick); Mobile home construction lumber, a potential market for yellow-poplar (D. Ostermeier); Studs from yellow-poplar, potential supplies in the Tennessee Valley Region (D. Ostermeier and R. Abt); Potential market of yellow-poplar veneer; Potential markets for yellow-poplar dimension lumber (R. Renaud); Trends in the use of yellow-poplar furniture (B. Turbyfill); Market potential of yellow-poplar in dimension and furniture (R. Stilwell); Yellow-poplar furniture, weatherwood finish (H. Reynolds); Utilization of yellow-poplar in furniture (D. Groom).

A2 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Forestry Department. Demand, supply and trade in pulp and paper: trends and prospects to 1990. In English, Spanish, and French. FAO Advisory Committee on Pulp and Paper. Expert Consultation on World Pulp and Paper Demand, Supply and Trade, Tunis, Sep 20, 1977. Rome. 74 pp. 1977.

A2 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Forestry Department. A reappraisal of the outlook for production, consumption and trade in wood-based panels. In English, Spanish, and French. FAO Committee on Wood-Based Panel Products, 5th Session, Rome, Nov 1977. Rome. 34 pp. 1977.

A2 FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Forestry Department. World paper and paperboard consumption outlook. In English, Spanish, and French. FAO Advisory Committee on Pulp and Paper. Expert Consultation on World Pulp and Paper Demand, Supply and Trade, Tunis, Sep 20, 1977. Rome. 96 pp. 1977.

A2 PAPASTAVROU, ANASTASSIOS C. A quantitative analysis of United States timber utilization (an analytical consumption model). Dissertation, Ph.D. University of Wisconsin, Madison. 273 pp. 1977.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

Computerized model projects long-term demand levels for timber, timber products, and their roundwood equivalents, for the years 1970-2020.

A2 PECK, T. J. Prospects for Europe's consumption of forest products and its trade with other regions. Commonwealth Forestry Review 57(3): 169-179. Sep 1978.

Discusses "European Timber Trends and Prospects, 1950-2000," a study by FAO and the UN Economic Commission for Europe.

B1a FEDESARROLLO. Colombian forest resources and their derived industries. Export: supply and guides to improve it. In Spanish. 3 Vols. Fund for Higher Education and Development, Bogota. Dec 1977.

B1a SUTTON, W. R. J. Some export marketing implications of New Zealand's current planting program. New Zealand Journal of Forestry 23(1): 85-93. 1978.

Of the export options available for radiata pine, pulp and paper have the least comparative advantage. The most marketable export will be clear-sawn timber (or plywood).

B2 LINDELL, GARY R. Log export restrictions of the western states and British Columbia. USDA Forest Service Pacific Northwest Forest and Range Experiment Station Gen. Tech. Rep. PNW-63, 14 pp. 1978.

Restrictions imposed on unprocessed timber by federal and state agencies.

B4a COOKE, D. B. Canadian pulp and paper in world trade. Forestry Chronicle 54(3): 147-151. Jun 1978.

In 1977 Canada produced 40 percent of the newsprint and 30 percent of the softwood bleached kraft used in the free world. Canadian pulp and paper industry could be adversely affected in the future by the slower world demand for paper and board, increased self-sufficiency of many key markets for newsprint and pulp, and the continuing trend of substituting cheaper pulp fibres for the more expensive softwood bleached kraft pulp.

B4b PATRICK, KEN. US chips to Europe, outlook bleak. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(9): 42-44. Aug 1978.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

Slowdown in Scandinavian pulp production in the last 2 years has dimmed prospects for booming US woodchip sales.

B5 UNITED STATES INTERNATIONAL TRADE COMMISSION. Summary of trade and tariff information, prepared in terms of the tariff schedules of the United States: wood doors. United States International Trade Commission Publication 841, 33 pp. Jun 1978.

U.S. production of wood doors is about equal to U.S. consumption. For the period 1972-1977, U.S. exports of wood doors remained at a level of less than 2 percent of domestic production. U.S. imports for the period ranged from an estimated low of 1.6 percent of apparent consumption in 1975 to a high of 2.7 percent in 1972.

B6 KIDD, WILLIAM E., JR. Marketing in West Virginia grown Christmas trees, 1970-1977. West Virginia Agriculture and Forestry 7(3): 13-18. Jun 1978.

Although the number of trees sold has declined since 1970, the gross income received by growers has increased.

B6 NOECKER, NORBERT, and MARVIN DREYER. Terms of sale, a method that works. American Christmas Tree Journal 22(4): 28. Nov 1978.

Method for selling Christmas trees.

C1 AGRICULTURAL PRICE REPORTING OFFICE. Agricultural prices 1977/78. Forest and forest industry. In Norwegian. 80 pp. Aug 1978.

C3 GENTIL, PIERRE. There is logic in market pulp price trends. In English; Fre., Ger., and Spa. sum. Pulp and Paper International 20(12): 66-68, 70. Nov 1978.

Method determines relative value of pulp grades based on the quality demanded by the papermaker. All main pulps are evaluated on a relative scale.

C3 HUTCHINS, CECIL C., JR. Pulpwood prices in the Southeast, 1977. USDA Forest Service Southeastern Forest Experiment Station Res. Note SE-269, 3 pp. Sep 1978.

Expenditures for pulpwood in the Southeast in 1977 were 12.5 percent more than in 1976. Residues used for pulp continued to increase in price, except for hardwood sawdust which showed a small decline.

V APPLIED TO MARKETING, TRADE, AND DEMAND FOR FOREST OUTPUT

C3 RICH, STUART U. Requirements of price leadership in the paper industry. Forest Products Journal 28(8): 9. Aug 1978.

Characteristics of price leaders: large productive capacity; large market share; strong commitment to the particular types of paper in question; new, cost-efficient mills; strong distribution system; good customer relations; effective market information system; sensitivity to the price and profit needs of the rest of the industry; good sense of timing; sound management organizations for pricing; effective product-line financial controls; and attention to the legal issues involved.

APPENDIX

THESES AND DISSERTATIONS

IN PROGRESS IN THE UNITED STATES AND CANADA

Each entry is arranged in the following order: first, the student's name, commencing with his last name; second, the title or subject of his work; third, the name of the institution where he is doing his studies; fourth, the degree toward which he is working; fifth and last, the possible date of completion.

I SOCIAL SCIENCE APPLIED TO FORESTRY AT LARGE

B2 ERKKILA, DAN[illegible] L. Forest management opportunities and associated regiona[illegible]mpacts for northeastern Minnesota. University of Minnesota, M.S. Jun 1979.

C CUBBAGE, FREDERICK W. State forest practices acts and regulations, a review and a case study for Minnesota. University of Minnesota, M.S. Mar 1979.

C GRIFFIN, GERARD GORDON. Forest policy and management in NFLD, Canada. University of New Brunswick, M.F. Apr 1979.

C LAMB, CHARLES G. An analysis of natural resource policy utilization and administration in Missouri. University of Missouri, Ph.D. May 1979.

C SCHAEFER, LARRY. Policy evaluation of Connecticut's tidal wetlands program. Yale University, Ph.D. Jun 1979.

G WALKER, EDWIN W. Role of the forestry sector in the economic development of Liberia. University of Toronto, M.S. Dec 1979.

H FRONDORF, ANNE F. Identification and management of critical environmental areas. University of Arizona, Ph.D. May 1979.

H WEIBLE, RALPH E. The economics of managing non-point forestry sources of water pollutants. University of Minnesota, M.S. Mar 1979.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

A1 ROSS, W. T. Labor mobility in the forest products industries. Virginia Polytechnic Institute and State University, M.S. Jun 1979.

B2b BERGER, JOYCE. Improved decision making within the Forest Service. Utah State University, M.S. Jun 1980.

B2b BONNETT, BARBARA ANN. Land acquisition policy of Parks Canada. University of New Brunswick, M.F. Sep 1979.

B2b CAMPBELL, GENE EDWARD. Economic costs of wilderness designation on the Willamette National Forest. Iowa State University, Ph.D. May 1979.

B2b GULDIN, RICHARD W. An economic model of the costs of wilderness management incurred by the United States Forest Service. Yale University, Ph.D. Jan 1979.

B2b KIELY, KATHLEEN ANNE. An assessment of visitor attitudes toward resource use and resource management in a national park. Virginia Polytechnic Institute and State University, Ph.D. Jun 1979.

B2b PARRY, B. THOMAS. Policy implementation at the Region 5 office of the U.S. Forest Service: wilderness classification and Rare I. University of California, Ph.D. Jun 1979.

B3a PALM, SALLY L. Evaluation of the forestry objectives and land management practices of purchasers of county-administered, tax-forfeited land. University of Minneosta, M.S. Apr 1979.

B3c FAIRWEATHER, JOHN. Reasons for living in the country, and decision-making of private nonindustrial forest landowners in southeast Missouri. University of Missouri, M.A. Aug 1979.

B3c GILLETT, GEOFFREY. An evaluation of industry-sponsored forestry incentives programs in New York State. SUNY College of Environmental Science and Forestry, M.S. Feb 1979.

B3c HUNTER, THOMAS PARKIN C. Forestry as an investment for the nonindustrial private landowner in the vicinity of Wake County, North Carolina. North Carolina State University, Ph.D. Jul 1979.

B3c MILLER, GARY WAYNE. The increment contract as a means of increasing timber production on nonindustrial private forests in the Central Appalachian Region. West Virginia University, M.S. Dec 1979.

II APPLIED TO FORESTRY'S PRODUCTIVE AGENTS

C2 HARVEY, HEATHER. Land use issues as they relate to forestry. Virginia Polytechnic Institute and State University, Ph.D. Sep 1979.

C2 SYLVESTER, JACQUELINE MARGARET. Integrating the landscape resource in an ecological land classification. University of New Brunswick, M.S. May 1979.

C3 HAGESTEDT, RICHARD R. Land allocation in land-use planning according to spatial considerations. Oregon State University, M.S. Mar 1979.

III APPLIED TO FOREST PRODUCTION

A1 LEHMKUHL, JOHN F. Elk movements, home range, and habitat selection and use in relation to timber harvest activities on a summer range in western Montana. University of Montana, M.S. Jan 1980.

A1 WESTMAN, WILLIAM W. Economic guidelines for adding beef cattle to pine timbered range in the South. Virginia Polytechnic Institute and State University, M.S. Jun 1979.

A5a(3) MAC KAY, GWENDOLYN SUSANNE. The economic impact of the outdoor recreation component of the Bathurst Pilot Project. University of New Brunswick, M.F. Jan 1979.

A5a(5) BESTER, NANCY L. A household production function approach for valuing the socio-psychological benefits of outdoor recreation experiences. Colorado State University, M.S. Aug 1979.

A5c DEANE, ANN PATRICIA. An evaluation of three nature interpretation techniques. University of New Brunswick, M.F. Jan 1979.

A5c LINKE, BARBARA ANN. Nature interpretation in the urban environment. University of New Brunswick, M.F. May 1979.

A5e BAIRD, PHILIP R. Survey of campers in northeast Iowa and southwest Wisconsin as per management preferences, and underlying reasons for these preferences. Iowa State University, M.S. Aug 1979.

A5e FICHTLER, RICHARD K. The relationship of recreational impacts on backcountry campsites to selected Montana habitat types. University of Montana, M.S. Nov 1979.

III APPLIED TO FOREST PRODUCTION

A5e JOHNSON, EVERETT E. Physical characteristics of campsites, effects on and impacts of use intensity. Clemson University, M.S. May 1979.

A5f CLARKE, LINDA DIANE. Wilderness area carrying capacity. University of New Brunswick, M.F. Sep 1979.

A5f PHILLEY, M. PETER. Backcountry crime in the wilderness. University of Montana, M.S. Jun 1979.

A5g PROPST, DENNIS B. Modelling and quantification of landscape preferences. Virginia Polytechnic Institute and State University, Ph.D. Mar 1979.

A5h BALLMAN, GARY. Operationalizing the ski touring opportunity spectrum: relationships between socio-psychological benefits and preferred ski touring environments. University of Minnesota, Ph.D. Sep 1979.

A5h GLEASON, WILLIAM S. Visitor succession, a case study on the middle fork of the Salmon River in Idaho. University of Montana, M.S. Sep 1979.

A5h STEIN, DAVID T. Changes in canoeists' perceptions of crowding in high density canoe use situations. Southern Illinois University, M.S. Apr 1979.

A5h UTTER, JACK. Allocating recreational use on wild or backcountry rivers. University of Montana, Ph.D. Sep 1979.

A6 GLENN, JAMES. An economic evaluation of the Little Choconut Creek (NY) flood control project. SUNY College of Environmental Science and Forestry, M.S. May 1979.

A7 RICHARDS, MERTON T. An economic measure of nonconsumptive wildlife values with implications for policy analysis. University of Arizona, Ph.D. Sep 1979.

A8 NAKAZAWA, MARY-LOU. User characteristics and preferences of urban natural areas in northeastern Illinois. University of Illinois, M.S. May 1980.

B1 COUTO, LAERCIO. The nature of timber production function. University of Toronto, Ph.D. Dec 1980.

B1 KAO, CHIANG. Silvicultural optimization of Douglas-fir stand management using three-descriptor dynamic programming—commercial and precommercial thinning, fertilization, and regeneration effort. Oregon State University, Ph.D. Jul 1979.

III APPLIED TO FOREST PRODUCTION

B2 DENNIS, NICHOLAS. The economic determination of suitable lands for national forest timber production. University of California, Ph.D. Dec 1979.

B2 GORTE, JULIE K. Methods which can be used in forest land application of industrial and municipal sewage sludges, and associated costs and benefits. Michigan State University, Ph.D. Dec 1979.

B5 PARK, PAUL. Development of financial maturity guides for sugar maple stumpage in New York. SUNY College of Environmental Science and Forestry, M.S. May 1979.

D3 PORTER, JOHN ALEXANDER. Factors affecting the salvage of timber damaged by the southern pine beetle. North Carolina State University, M.S. Feb 1979.

E DE REZENDE, JOSE LUIZ PEREIRA. Application of benefit-cost analysis to forestry problems. University of Toronto, Ph.D. Dec 1980.

E MICHIE, BRUCE R. Analysis of and economic implication of a management system applied to uneven-aged northern hardwood stands. University of Wisconsin, Madison. Dec 1979.

E MURPHY, DENNIS L. A decision analysis approach to the design and implementation of a forest management information system. University of Minnesota, Ph.D. Dec 1980.

E ZOELLNER, JAY R. The evaluation of an instructional module to be used as an aid in the formulation of evaluation objectives for natural resource interpreters. Utah State University, M.S. May 1980.

IV APPLIED TO MANUFACTURING

A1b ABT, ROBERT C. The importance of wood-based industry to the Tennessee economy, an econometric approach. University of Tennessee, M.S. Aug 1979.

A1b BOWERS, JOHN R. An input-output analysis of the impacts of changes in the forest industries upon Alabama's economy. Auburn University, M.S. Jun 1979.

C1c BARRINGTON, RODNEY C., JR. A study of managerial policy concerning the decision making processes used in the wooden pallet manufacturing industry in New York State. SUNY College of Environmental Science and Forestry, M.S. May 1979.

IV APPLIED TO MANUFACTURING

C2a KALTENBERG, MICHAEL C. An explanation of the locational production trends exhibited by the pulp, paper, and paperboard industries. University of Wisconsin, Ph.D. Jun 1980.

C3a LEEFERS, LARRY A. Forces affecting technological change in the wood-based panel products industries. Michigan State University, Ph.D. Dec 1979.

C8 AUBE, PETER J. Cost of wood biomass for energy production in Minnesota's economic development region II. University of Minnesota, M.S. Mar 1980.

C8 LIEBENOW, W. MICHAEL. Guides to planning energy-transformation systems in the southern kraft pulp-paper industry. Virginia Polytechnic Institute and State University, Ph.D. Dec 1979.

C8 SKOG, KENNETH E. The effect of increased demand of wood for fuel in northern Michigan on traditional wood users. Michigan State University, Ph.D. Dec 1979.

V APPLIED TO MARKETING, TRADE, DEMAND FOR FOREST OUTPUT

B1a CHOU, JIEH-JEN. Econometric analysis of United States forest products imports and exports. University of Wisconsin, Ph.D. Jun 1980.

B2 JACKSON, BEN D. A long-run demand and supply analysis of the East-Texas timber market. Texas A&M University, Ph.D. Aug 1979.

B2 LANGE, WILLIAM JOHN. A regional econometric model of the markets for hardwood lumber and stumpage. Oregon State University, Ph.D. Jun 1979.

C2 BRANNMAN, LANCE. Development of stumpage price indices for major Pacific Northwest timber species. University of Wisconsin, Ph.D. Jun 1981.

I N D E X

This list is to help users of the bibliography find the references they are looking for. The words provide entry into the appropriate sections of the bibliography. The index is best used in conjunction with the Subject Matter Classification Scheme, republished at the front of this issue. For example, if the user enters the index at Administration, forest, he is referred to Section III of the bibliography, because to be more specific would require subdividing the topic essentially as the Classification Scheme does. The user's next step then, is to turn to the Scheme, where he finds that forest administration in general is IIIA1, administration pertaining to forest roads is IIIC, and so on.

Absenteeism, IIA4

Accounting (see Planning and plan)

Acreage (see Area)

Administration
- forest, III
- forestry program, IC
- personnel, IIA
- professional, subprofessional affairs, IF
- research, IE

Advertising, V

Aesthetic value (see Amenities)

Afforestation, IIIB3

Africa
- forestry at large, IB5
- manufacturing, IVA1e
- (See also Union of South Africa)

Allowable cut, IIIB5

Alternatives
- genetic production, IIIE
- manufacturing, IVA4

Amenities, IIIA5
- integrated forestry, IIIA1
- land use, IIC

Appraisal (see Valuation)

Area
- forestry at large, IB
- land, IIC
- ownership, IIB
- policy, program, IC

Argentina
- forestry at large, IB4
- manufacturing, IVA1d

Asia
- forestry at large, IB5
- manufacturing, IVA1e
- (See also China; Japan; Taiwan; USSR)

Assessment (see Valuation)

Auction (see Market and marketing)

Australia
- forestry at large, IB4
- manufacturing, IVA1d

Balloon logging, IVB

Bark, IVC4
- demand, VA
- harvesting, IVB
- manufacturing, IVC4
- marketing, VB5
- price, VC3
- transportation
  - harvesting, IVB4
  - marketing, VD

Behavior of the individual, ID5

Board
  building (see Pulp and paper)
  composition (see Composition board)
  paper (see Pulp and paper)

Boards (see Lumber)

Bond, IID2

Box (see Lumber; Pulp and paper)

Brashing, IIIB4

Budget
  forestry at large, IID1
  genetic production, IIIE
  manufacturing, IVA4

Building (see Construction)

Building board (see Pulp and paper)

Burning (see Fire)

Business
  forestry at large, IB
  genetic production, IIIE
  manufacturing, IVA4
  principles, IA

Buyer
  commodity, VB
  demand, VA
  land, IIC3

Camping, IIIA5e

Canada
  forestry at large, IB2
  manufacturing, IVA1b

Canoeing, IIIA5h

Capital, IID
  gain, ID1c
  genetic production, IIIE
  manufacturing, IVA4

Caribbean
  forestry at large, IB5
  manufacturing, IVA1e

Cellulose (see Pulp and paper)

Charcoal, IVC8
  demand, VA
  manufacturing, IVC8
  marketing, VB5
  price, VC3
  transportation, VD

Chile
  forestry at large, IB4
  manufacturing, IVA1d

China
  forestry at large, IB3
  manufacturing, IVA1c

Chipboard (see Composition board)

Chipping (see Pulpwood and chips; Naval stores)

Chips (see Pulpwood and chips)

Christmas trees and greens, IIIA2
  demand, VA
  genetic production, IIIA2
  marketing, VB6
  price, VC3
  transportation
    harvesting, IVB4
    marketing, VD

City forest (see Forest)

Collateral, IID2

Competition
  forest use, IIIA1
  land, IIC
  market, VB
  silviculture, IIIB

Composition board, IVC9
  demand, VA
  manufacturing, IVC9
  marketing, VB5
  price, VC3
  transportation, VD

Conservation
  land, IIC3
  policy, IC
  resource owner, IIB
  saving, IID1
  social interest, ID4

Construction, IVC10
demand. VA
manufacturing, IVC10
marketing, VB7
price, VC3

Consumer and consumption, VA

Continuing education, IF

Cooperative association
forestry at large, IB
manufacturing, IV
marketing, VB

County forest (see Forest)

Credit, IID2

Crosstie, IVC6
demand, VA
logging, IVB
manufacturing, IVC6
marketing, VB5
price, VC3
transportation
logging, IVB4
marketing, VD

Curriculum, IF

Custom, ID4

Cutting, IVB
cycle, harvest, IIIB5
intermediate, IIIB4

Data processing
genetic production, IIIE
manufacturing, IVA4

Debarking
harvesting, IVB3
manufacturing, IVC4

Decay, IIID4

Decision making (see Planning and plan)

Decorative product, IVD1
(See also Christmas trees and greens)

Demand, VA
capital, IID1
foreign trade, VB
labor, IIA1
land, IIC1
marketing, VB
professional, subprofessional, IF
recreation, IIIA5a(4)

Depletion
income tax, ID1c
regional resources, IB

Depreciation, IVA4

Development
genetic production, III
principles, IA
regional
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